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Notes on Diseases of the Foal*

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INTRODUCTION

I consider it a great honour to be asked to address this Society and it is a great pleasure to me to return to the area in which I spent most of my pupil days at the feet of your worthy President.

Most of my remarks will be confined to those diseases of foals which may be classed under the heading of septicaemia. In the preparation of my paper I found this table of some assistance and it may help you to follow my notes if I exhibit it.

FOAL SEPTICAEMIA

Source	*Route*	*Organism*		*Signs*
Mare Foal Stable Soil	Mouth Navel Placenta Wounds	Streptococci *E. coli* *Sh. viscosa* *S. abortivo-equinus*	Septicaemia	Joint-ill Navel-ill Dysentery Pneumonia Spotted kidney

Foal Septicaemia

Septicaemia follows infection of the foal by organisms gaining entry by the mouth, by the navel, by wounds or by the placental circulation. The general circulation is reached by one of these routes. Infection by the placental circulation is directly into the blood stream and is probably a very rare occurrence. By the mouth the organisms reach the blood stream through the epithelial lining of the stomach and intestines. They do this the more readily as at birth there is no mucous layer covering and protecting the epithelium. From the umbilical cord, besides the local navel-ill condition, infection reaches the portal vein or the posterior aorta through the clotted blood in the umbilical vein or umbilical arteries. From wounds organisms enter the blood stream by the peripheral circulation or by the lymphatics.

There are three organisms which commonly cause septicaemia in foals. They are streptococci, *Escherichia coli* and *Shigella viscosa* while a small percentage of cases is caused by *Salmonella abortivo-equinus*.

A state of septicaemia is brought about and a febrile condition results indicated by listlessness. As a result of the septicaemia, enteritis or dysentery may occur, or a lobar pneumonia, or the infection may settle in other tissues for which it has a predilection—the joints, giving rise to joint-ill, or the liver and kidneys, indicated by hepatitis and pin-point pustules in the kidney tissue.

In this way foal septicaemia may appear clinically as one or more of the following conditions: Simple fever, dysentery, pneumonia, joint-ill, navel-ill, spotted kidney.

The organisms responsible for foal septicaemia are not essentially pathogenic with the probable exception of *S. abortivo-equinus*. Strains of streptococci and coli may be found in any stable and these and other organisms may occur in the mare's genital passages or elsewhere without producing any lesions.

A number of cases are, in this way, cryptogenetic in origin, but the great danger arises, when once infection has occurred, of the production of virulent strains. These strains persist on the one farm or stud and foals are lost year after year with the same symptoms in case after case.

Isolated cases are usually treated according to the symptoms shown and the local knowledge of the practitioner, but when an infection has become established on premises it is important to identify the causal organism as well as the source and route of infection. The source of the infection can then perhaps be eliminated or the correct prophylactic or curative treatment applied.

*Presented to the Southern Counties Division, N.V.M.A., on the occasion of the 55th annual general meeting, at Salisbury, March 10th, 1939.

I can give three illustrations here.

Magnusson, dealing with a septicaemia of foals due to an organism that does not occur in this country, *Clostridium equi*, was doing a certain amount of experimental work with the disease which had killed on one stud an average of between three and four foals a year for 15 years. He found serum therapy of very little value but when he moved the mares five years ago on to fresh premises he lost his source of material to work with as no cases have occurred since. This was a case where the infection was carried in the soil.

In India in a breeding district where joint-ill was very common, it was found that by marking all mares whose foals were affected and not breeding from them again, the mortality rate from this cause was reduced by 75 per cent. This was a case where carriers were involved.

In Lincolnshire, on a farm where all the foals (four or five each year) had died for three years, the cause was found to be a streptococcus. Prophylactic treatment of all foals with stock serum and vaccine saved every foal for the next two years. I have no records beyond this period. This was a case where attacking the specific organism was effective.

These examples could be multiplied but it may be interesting instead just to go over the general principles rapidly.

The Mare.—She may be *infected* by one or other of these organisms and may transmit the infection to the foal—or she may be harbouring the organisms as a *carrier* and so transmit infection to her foal without showing any signs of disease herself. The organisms in the carrier mare may be harboured in the bowels or uterus or even in the udder or on the skin. An ounce or two of her blood submitted to a laboratory for agglutination test may reveal the type of infection.

Mares infected in the genital tract frequently abort but those which carry their foals in spite of an infection should be douched with a mild antiseptic in saline solution. Swabs taken from the vagina and the os uteri will reveal the presence of infection. If the causal organism is known vaccine treatment before foaling may be useful. It will stimulate her resistance and may eliminate the infection, while the antibodies produced will be passed to the foal in her milk and will help his resistance to infection.

The Foals.—Infection from other foals can be avoided by general antiseptic and hygienic precautions, isolation and the careful disposal of dead and aborted foals.

The Stables.—Infection and contamination of stables must be avoided by the usual hygienic precautions and all infected material should be carefully destroyed.

The Soil.—If infection arises from the soil of paddocks there is no choice but to close down the premises and breed elsewhere.

Route of Infection.

Oral Infection.—Infection by this route cannot be prevented. The foal must feed and will lick such material as discharges and the mare's droppings, from which infection may be picked up. The disease must be countered at some other stage than this.

Navel Infection.—Careful treatment of the navel and the umbilical cord immediately after birth is a practical way of preventing access of the organisms to the system. The simplest methods are probably the best as there may be some risk of spreading infection if the parts are much handled. The cord should be tied about one inch from the body with strong carbolised tape, and the stump of cord and the umbilical region painted with strong tincture of iodine.

Placental Infection.—Infection by organisms through the placenta from the mare's blood stream may occur as a rare condition. A mare in this state would probably abort the foetus but if it did survive until full term the foal would be born with an acute infection and would have a very small chance of survival.

Wound Infection.—The foal should be carefully handled to prevent the occurrence of injuries which, if they do occur, should be treated immediately with tincture of iodine and BIPP.

The Organisms.

E. coli and streptococci as well as *S. abortivo-equinus* may cause abortion, in which case the foal, if alive, will be born infected or will contract infection from the membranes as soon as he is born.

S. viscosa may be present in the mare's genital passages but it is not known to cause abortion. Infection with this organism does not occur by the mouth. *S. viscosa* is delicate and may be absent from a swab that has spent the night in the post, while it may be found in large numbers if cultures are made from the same material in a fresh condition.

Infection by *S. abortivo-equinus* causes a high titre of antibodies in the mare's blood and carriers can be detected by the agglutination test.

Treatment with vaccines and serum prepared with all these organisms is good except in the case of *E. coli* which only responds to vaccines and sera prepared against the particular strain involved.

Vaccine and Serum Treatment

The main thing is to know the organism. In mares known to be infected or suspected of

being carriers a course of vaccine treatment can be given. This may enable the mare to throw off the infection. This vaccination of mares may be used as prophylactic treatment of the foal. Antibodies are formed in the mare's blood stream. These do not reach the foal *in utero* but they are secreted in the colostral milk in high concentration and reach the blood stream of the foal after he has sucked. The antibodies produced in the mare's blood stream may also be used in another way—by drawing off a quantity of the mare's blood and injecting it subcutaneously and intravenously into the foal. The blood from mares that have not been vaccinated can be used similarly if it is thought that they may have a naturally acquired immunity. The blood can be injected either as whole blood or the serum may first be separated from the corpuscles by citrating and straining through gauze.

Vaccination of the foal is useful as a prophylactic measure and in subacute infections when it should be combined with the use of serum. Serum is most useful in acute conditions and should be given in large doses. As it is expensive it should be given in the way in which it is most effective—half intravenously and half subcutaneously.

In streptococcic and even in other infections one of the sulphanilamide preparations may be used. The drug may be used in the powder form as a drench or be given in solution as streptocide or prontosil subcutaneously. Recent experience with these drugs has shown that remarkable results may be obtained within as little time as 24 hours, the lameness and swellings both disappearing in some cases in a very short time.

Symptomatic Treatment

Pneumonia.—Pneumonia is one of the less common results of septicaemia in new-born foals but it may occur in this country due to one or more of these organisms as well as on the Continent due to *Cl. equi*. Besides serum treatment great care should be taken to keep the foal warm and well supplied with fresh air. Mild stimulant treatment can be applied to the chest wall, rubbing with lin. saponis meth., for instance, and iodides should be prescribed internally.

Navel-ill.—Prophylactic treatment of the navel has already been mentioned. If local infection is present the stump should be removed as soon as it will come away without tearing any tissues and any raw or discharging surfaces should be well swabbed with tincture of iodine and dressed with BIPP. Any abscesses forming should be opened up and dressed in a similar way.

Joint-ill.—Local treatment of the joints consists of the application of strong tincture of iodine to the swellings which may have to be punctured or incised and drained. Antiphlogistine or Animalintex poultices may also be used.

Dysentery.—This type of the disease is rapidly fatal in very young foals. In cases where other organs are affected the foal may gain some strength and resistance, as the days go by, from the mare's milk, but even this advantage is denied him when dysentery sets in. If he is a few days old before the disease manifests itself he has considerably more chance of survival since he has benefited from the mare's colostrum as nutriment, as a source of antibody resistance and as a source of vitamin A, which is a help in countering infection. Warmth is also important. As for treatment, the foal should be given an aperient of castor and olive oils if this has not already been done. This is followed by teaspoonful doses of bismuth and salol and bismuth *cum* pepsini co. alternately at four-hourly intervals. If a coli infection is present brilliant green, one part to one thousand, should be added, as coli cannot grow in the presence of this dye. Messrs. Willows & Co. put up a bismuth preparation with brilliant green which has been found to be very effective in the treatment of scour in calves in Scotland.

Spotted Kidney.—This type of disease is indicated by an extreme listlessness a day or two after birth followed by death at about four days old. On *post-mortem* examination the liver is found to be congested and the kidney spotted with minute abscesses. Treatment on premises where these cases occur must be prophylactic and applied to the mares or to the foals as soon as they are dropped. These cases are usually associated with a streptococcus.

General Prophylactic Treatment

A few points may be mentioned under this heading. One could, of course, include the whole of stud management.

The foal should be kept dry and warm and should be encouraged to suck as soon as possible. An ounce of castor and olive oil mixture should be given immediately he is dropped, after tying the cord. Meconium should be removed if there is any difficulty in passing it. The judicious use of a thermometer may anticipate trouble by a few hours.

Very important is the correct feeding and the amount of exercise given to the mare.

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I now propose to mention quite briefly a few conditions occurring in foals during the first few days of life, some of which may be associated with septicaemia and some of which might be confused with that disease.

Retained Meconium in the Foal.—This is a very serious condition and unless attended to

at once may readily cause the death of the foal either directly or indirectly. Lang, in his recent report on foal mortality for 1938, actually states that in *all* his cases of toxaemia and joint-ill there was a history of retained meconium. This does not coincide with one's own experience, but it gives a clear indication of the consequences of the disease.

Treatment consists in the mechanical removal of the impacted mass with a scoop spoon. This should be at least a foot long and should have a rounded end and rounded edges. Liquid paraffin should be injected with a long rubber nozzle beyond the posterior portion of the impaction.

For prophylaxis, drench the foal at birth with an ounce of a mixture of three parts of castor oil and one part of olive oil.

Jaundice of the New-born Foal.—This condition is met with occasionally in thoroughbred foals. The membranes of the eyes and mouth are distinctly yellow at birth. The foal is spiritless and may be affected with diarrhoea. The temperature is usually normal or low. The cause is not known and there is no cure for the disease. *Post-mortem* examination reveals a yellow discoloration of the internal organs and membranes. There is an excessive number of red corpuscles in the circulating blood and the liver and kidneys, whose duty it is to deal with the products of disintegrated blood corpuscles, are congested with haemosiderin.

Pervious Urachus.—In this condition urine persists in leaking from the umbilicus. It is caused by imperfect retraction of the urachus after birth. The part is liable to become infected if neglected.

Treatment consists of dressing with tincture of iodine on long fine forceps and packing up the lumen with BIPP. In infected cases the cavity should be well curetted and then treated with iodine and BIPP. On no account should the urachus be ligatured.

Barking Foals.—This condition, of which the cause is unknown, attacks the foal within the first twelve hours of life, usually after first suckling, but it may commence before he has stood up. It appears to be a nervous condition and confined to the thoroughbred. The foal blunders about unsteadily, apparently quite blind, walking into the walls of his box and in some cases trying to climb the walls. Spasmodic contraction of various muscle groups occurs and the animal soon goes down and is unable to rise. He makes galloping movements with his limbs and spasms of the neck and jaw muscles are accompanied by a continually repeated noise in the throat resembling very closely the yapping of a terrier.

For treatment give sedatives; chloral hydrate in drachm doses *per rectum* is probably the most suitable. Morphia is contra-indicated as it only increases the excitability. Oxygen and dextro-calcium subcutaneously have been given with subsequent recovery. Blindness accompanies the disease and persists for ten days or longer in those cases which recover.

Food cannot be given until the spasms have subsided. Prognosis is very grave, most cases dying of exhaustion and starvation in a day or two. There seem to be no after-effects in recovered cases.

Bruised Heart.—This accident occurs at foaling as a result probably of the mare making an effort to expel the foal as the shoulders are passing through her pelvic ring.

The accident does not appear to affect the foal at first but after a while he loses the inclination to play and suck and lies on his side or on his midriff with his head and neck stretched out to their full extent, and he cannot be persuaded to stand. Sometimes the foal may be held up and be encouraged to suck for a few moments at a time until he gets too weak but as a rule he is quite listless and frequently moans in a distressing manner. He may be tender over the ribs on one or both sides. Death due to compression of the heart by the effusion into the pericardium occurs within two or three days of birth.

There is no treatment, though tapping the pericardium would relieve the symptoms if a case were to be diagnosed early enough. *Post-mortem* examination shows discoloration of the heart muscle and effusion into the pericardium; there may be partial or complete fracture of one or more ribs on either side, usually including the fifth rib. The constant position of the injuries should help to distinguish this condition from injuries caused by the mare kicking or treading on her foal.

I have presented you with nothing new and nothing original but I have the satisfaction that in preparing these notes I have cleared up a number of confusions in my own mind and I have no doubt that you will lighten my darkness still further in the discussion of foal diseases to which I hope you will all contribute and to which I am looking forward.

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Mr. J. F. D. Tutt, F.R.C.V.S., in opening the discussion on Dr. Fraser's paper, said:—

The control of foal diseases is almost entirely a question of hygiene, and throughout his paper, Dr. Fraser is constantly emphasising this point.

It will be in his ability in the field of preventive medicine that the veterinary surgeon can best prove the value of his profession to the public. In researches which were carried out in Hanover some eight years ago, it was found that cases of paratyphoid equine abortion were practically suppressed by attention to hygiene,

the introduction of separate foaling boxes, and the discovery of infected mares by means of the agglutination test.

I think it will be agreed that the most hazardous period of life for the new-born foal is that which elapses from the time of birth, and the time when the healing of the umbilicus has been completed. Naturally this will vary, but it may be put at from seven to twelve days.

In his paper, Dr. Fraser has divided up several diseases which for years have been grouped more or less into one, and what I think is apt to become a very loose term, that of "joint-evil."

When one is dealing with the causes which are responsible for disease in the new-born foal, it is necessary to take into consideration intrinsic as well as extrinsic causes, which may be separate or in combination.

The factors which enter into the intrinsic causes are those which are entirely associated with the state of any normal mammal at birth. The young animal has yet to be equipped with defences against invaders. The neo-natal intestine is, at one and the same time, permeable to microbic invaders, and to the protective substances contained in the colostrum and milk. I think that there is good reason to believe that not a few of the diseases in foals have their origin in the intestine, and I consider that it is important that no prolonged retention of meconium should be permitted. It is from this source that the new-born foal alone receives a measure of passive immunity that will eventually be followed by active defence.

For the extrinsic causes, one has to take into consideration the environment and attend to proper hygiene and feeding.

The intra-uterine factors, of course, are those which the embryo or foetus may encounter in the uterus, and depending on their nature and virulence, either cause its death *in utero* or give rise to mischief after birth.

I believe that there are good reasons—supported as they are by clinical evidence to which I am sure every practitioner here to-day will subscribe—to suppose that intra-uterine infection is common, and in support of this contention I would say:—

(1) Certain mares year after year produce foals dying of joint-evil.

(2) Disease appears so early that post-natal infection could not have had time to develop.

(3) Even when the navel has been treated with great care, joint-evil sets in.

(4) The same bacillus is found in the uterus and in the foal and placental membranes.

I should like to ask Dr. Fraser if he is able to express an opinion on the value of protective inoculation of the mare during the last stages of pregnancy. It is a question which is often raised, but there do not appear to be any reliable data on which to express an opinion other than a personal one.

Personally, I think that the ideal method is to so inoculate the mare, and also to inoculate the foal within twelve hours of birth, repeating the inoculation when it is four to six days old.

Dr. Fraser likes carbolised tape to ligature the navel cord. I prefer eucalyptus tape, but this is merely one of choice. I do not like to rely on iodine alone as the dressing for the stump. I must confess that I am not very keen on iodine save as a surface antiseptic, and the navel dressing that I use is composed of Stockholm tar, creosote, turpentine and carbolic acid and is made up by Messrs. Hewlett. As a rule, two applications are sufficient.

Whilst on the subject, I think I can comment on the condition known as pervious urachus, to which Dr. Fraser draws attention in a later part of his paper. I do not consider that dressing with iodine followed by BIPP is of any value. It is my view that it is a surgical condition which requires surgical treatment, and I entirely disagree with Dr. Fraser *that under no circumstances* should it be ligatured. It should be, except when the foal is ill, and it is the only rational treatment. Why does Dr. Fraser advocate tying the navel cord but object to tying a pervious urachus, which is a potent channel of infection? After ligation, I apply a dry dressing. It is quite hopeless to try, let alone expect, an ointment to stop on a wet surface and which, if Dr. Fraser does not ligature the source, must for a time remain one.

Having attended to the navel, Dr. Fraser advocates the administration of an aperient. Here again, he and I differ, but again it is a matter of routine, or, shall I say, opinion.

I prefer to wait until the foal has had its first suck, and then according to its breed, two to four ounces of the following mixture which is kept made up in the stud pharmacy is given: Castor oil, 70 ounces; turpentine, 9 ounces; ol. menth. pip., ½ ounce.

Shortly after this drench, a warm enema of either olive oil or liquid paraffin is administered with a Bowles syringe which is preferable to the ordinary rubber enema. If this practice is carried out, cases of stoppage from retention of meconium will be reduced to a minimum, and I consider that the early removal of this cannot be too highly insisted upon. Under no circumstances must enemata of excessive amounts of soapy water be given. It is far better to rely on warm oily ones. Glycerine is far too irritant and should not be used.

If resort has to be made to surgical measures to remove the meconium, the operator must proceed with care and patience. A small spoon with the blade approaching the square is preferable to the oval pattern on the market for this purpose, and there is no advantage in using one

of the largest cumbersome types, which are not only difficult to use, but may cause serious damage to the wall of the rectum.

Coming now to the diseases, I have had very little success with vaccines and serum when once signs of disease are manifest clinically, and I have come to the conclusion that their value is, for the most part, purely protective.

During the last season, I had some very bad cases indeed of joint-evil, and had very encouraging results with prontosil (Bayer) and soluseptasine (May & Baker), giving these preparations both as injections and in tablet form. The injections were given at 24-hourly intervals, and the tablets three or four times a day. In cases where urination was frequent, elixir mandelic acid was given in addition.

Why is it that joint-evil is more common in the heavy breeds than the light; and why are foals born late as a rule healthier than others?

I do not like surgical interference with the joints, but prefer to rely on constant hot fomentations, together with the application of an antiphlogistine poultice. If vaseline is applied to any part on which it is desired to apply antiphlogistine, beforehand, the dressing will readily peel off when it is desired to put a fresh one on, and there will be no caking.

I agree with Dr. Fraser that in treating cases of dysentery an aperient such as castor oil should precede the other remedies, and in cases where a good purge is required a teaspoonful dose of Bayer's "Istin" is of great value.

With regard to "spotted kidney," does Dr. Fraser regard this *post-mortem* finding as indicative of a specific disease? Is it not uncommonly associated with, or indicative of, joint evil?

On an average, I encounter one case per annum of jaundice in the new-born foal, and have been unable to account for the cause of the condition.

I am very pleased to see that Dr. Fraser has something to say about "barkers," as when I, seeking knowledge concerning it, mentioned the condition a short time ago to more than one distinguished member of our profession, I was regarded as one who believes in the Loch Ness monster, and indulging in my customary partiality for leg-pulling.

I have seen no reference to the condition since Brayley Reynolds mentioned it at a meeting of the Lincolnshire Division in 1930. There does not seem to be any doubt that it is a nervous condition, but its aetiology is obscure. Does heredity play any part in it? I had one mare, which at the previous season produced a foal which died of joint-evil within 72 hours of birth, give birth to a barker which lived 36 hours. I really thought that in this case I had achieved recovery, as after withdrawing a pint of blood from the jugular of the mare, and injecting half a pint into each buttock of the foal, the symptoms subsided to a remarkable degree and he actually had a suck. The hope did not materialise, as the symptoms reappeared in a few hours and death followed. It seems as if there may be some seasonal influence on the incidence of the disease. I had four in that year —three years ago—but have not had a case since then at this particular stud, nor at any other during the past two years. I have never seen a case in the heavy breeds. They have been confined exclusively to thoroughbreds.

There is no mistaking the condition. The affected animal barks like a dog, and on a dark night there is no more unearthly sound saving that of the reputed Banshee. Before the actual symptoms set in, one can often spot a case by the listlessness of the foal. In short, he appears "doped." Brayley Reynolds reports having knowledge of two recoveries, one of which eventually won several good races.

Again, in his excellent paper Dr. Fraser draws attention to what I consider is an often overlooked condition, and one which I think is responsible in the majority of foals that die immediately after birth and during the following 36 to 48 hours, and that is cracked ribs and bruised heart.

The injury is almost always in the region of the fifth rib and generally one or two ribs on either side of this are also affected. It is invariably accompanied by bruising of the front of the heart, the muscle of the right ventricle showing more or less marked discoloration. Cases are, of course, encountered where the bruising of the heart is unaccompanied by rib injury. Both conditions arise during the act of foaling, and the symptoms in the majority of cases become apparent fairly suddenly and usually within the first 24 hours of birth. There is no possible treatment, and the only method of prevention is to impress upon the attendants the necessity to exercise care when rendering assistance during the act of foaling.

THE MINISTRY AND JOHNE'S DISEASE

At a recent meeting of the Herefordshire Diseases of Animals Committee a letter was read from the Ministry of Agriculture stating that there were considerable difficulties in diagnosing incipient cases of Johne's disease, and that until further knowledge was acquired slaughter of further animals could not be considered. Before measures to combat the disease could be effected it would be necessary to impose restrictions on the movement of animals for a long period. In the opinion of the Minister, restrictions could not be justified without a greater promise of success. In these circumstances the Minister had decided that no useful purpose would be served by the scheduling of Johne's disease as a notifiable disease under the Diseases of Animals Acts.

MORTALITY AMONG LIVESTOCK DUE TO POISONS*

J. F. TOCHER

General Experience.

In my capacity as Consulting Chemist to the Highland and Agricultural Society and also as Agricultural Analyst for many counties, I have had numerous samples of feeding stuffs and bowel contents to examine. On looking over my old reports to the Highland Society and also the reports on cases which have come into Court, arsenic and lead are found to be two common poisons which cause death among livestock. No less than twelve cases of lead poisoning have been reported by me during the past ten years. There were six cases of arsenical poisoning, including the notorious Fifeshire case where over 30 deaths of bullocks were caused by the accidental presence of arsenic in a feeding stuff. Eleven cases of strychnine poisoning occurred, mainly amongst poultry and pigeons. One case of salt poisoning was due to excessive salt being in a ration to poultry. Castor seed was found to be present in two cases. Vegetable poisons were the cause of death in two instances—a ranunculus plant, the Lesser Spearwort, in one case, and rhododendron leaves in another case. A number of cases were reported to me of scouring of cattle supposed to be due to bean meal. No evidence was found, however, of any poison in samples of bowel contents sent to me for analysis.

Wholesale Poisoning of Cattle by Arsenic

The Fifeshire case of arsenical poisoning is notorious in many ways. It is worth while referring to this case on account of the fact that in the High Court a long proof was led before Lord Fleming with the result that he gave judgment against the farmer. A feeding stuff known as Carnosine cake was supplied by a Glasgow manufacturer to a farmer in Auchtermuchty. Two tons of this Carnosine cake were supplied in jute bags each containing 2 cwt. Each bag was sewn up. The interesting thing about this case is that there was no doubt as to the facts. The bags were emptied on to the floor of the cake room in the steading which had been previously swept. The cake was used for seven days. Shortly afterwards 37 stirks died. A police inspector and other witnesses were brought by the farmer to examine the cake house and its contents. About a foot up from the floor a half-packet of Cooper's dip with arsenic was found. The point is that the packet was not on the floor of the cake house but in the midst of the consignment. All the bags were sent to me for examination. Nineteen of the bags were new but the twentieth bag appeared to be an old bag. It was smeared with Cooper's dip and contained a large quantity of arsenic. The farmer lost the case in Lord Fleming's Court because it was held that the twentieth bag which contained the arsenic was a new bag and not a bag which had been returned to the manufacturers by another farmer. Lord Fleming accepted the evidence of the bag manufacturers against the other evidence. The case was appealed to the First Division of the Court of Session. The Law Lords, by a majority, upheld the Lord Ordinary's judgment, but the Lord President gave his opinion that the fault was with the manufacturer. Advice was given to the farmer to appeal to the House of Lords and the Lords unanimously gave judgment in favour of the farmer. He recovered damages to the extent of £1,200. The difficulty in this case was the evidence of the manufacturer's witnesses. It is quite clear from circumstantial evidence that an old bag had been returned by another farmer to the manufacturer and it had been put in amongst the new bags. In the early morning a workman, quite in ignorance of the fact that this old bag contained anything poisonous, probably filled in the Carnosine cake and dispatched it, along with the other 19 bags, to the farmer. This accounts for the fact, which witnesses were able to prove, that the half-packet of Cooper's dip was found in the middle of the consignment in the farmer's cake house. A very important article appeared in the *Juridical Review* of March of this year, explaining all the legal difficulties in this case. A statement made by the writer of the article is that this judicial mélange was unprecedented. The Lord President and the Lord Chancellor decided the case. The Lord Chancellor gave the leading opinion based on what is called *Res ipsa loquitur*, which means that "the thing speaks for itself." There was, however, no difficulty in this case so far as the cause of death was concerned. The veterinary surgeon attending the case very promptly said, when the farmer called him in, that it was a case of arsenical poisoning.

The Iodol Case

A very curious case which did not involve any evidence on the part of a veterinary surgeon is the now rather famous Iodol Case which was taken from the Wick Sheriff Court to the Second Division of the Court of Session. Here a firm sold a farmer in Caithness a feeding stuff called "Iodol" making a claim that its feeding value was ten times that of linseed cake. On analysis the Iodol was found to contain 17 per cent. oil, 18 per cent. albuminoids and 37 per cent. carbohydrates as against linseed cake containing 10 per cent. oil, 30 per cent. albuminoids and

*Address to the North of Scotland Division, N.V.M.A., at a meeting held in Marischal College, Aberdeen, May 27th, 1939.

35 per cent. carbohydrates. In this case the fact was established that the value of the Iodol was approximately that of linseed cake and that it was absurd to suggest that the feeding stuff had ten times the nutritive value of linseed cake.

In giving the final judgment at the Court of Session the Lord Justice Clerk found that the representation that Iodol was equivalent to ten times its weight in linseed cake was false and that linseed cake and Iodol had practically the same nutritive value. The judgment was delivered as a contravention of the Sale of Goods Act, 1893, Part I, Section 14, where among other provisions there is a provision regarding an implied warranty or condition as to quality or fitness for a particular purpose.

Corn Cockle Seed in Tare Meal

A very important case came up in Court which was subsequently withdrawn as a result of feeding experiments on corn cockle seed. Corn cockle seed is known to contain a toxic principle or glucoside known variously as githagin, saponin, agrostemmin, sapotoxin, agrostemmasapotoxin or smilacin. The proportion of sapotoxin in corn cockle is stated to be about 6·5 per cent. The toxic substance is freely soluble in water and is poisonous. Cornevin, a well-known authority, states that the amount of corn cockle flour which would cause death in a calf, per 100 pounds of live weight, is four ounces. It is to be noted that Cornevin used corn cockle flour free from the seed coat. Millspaugh reported on a case where two calves died when each was fed with 14½ ounces of wheat flour containing, respectively, 5·15 ounces and 6·5 ounces of corn cockle meal. Acute poisoning, due to the ingestion of large quantities of seed, may cause death in 24 hours or less.

A sample of tare meal sent to me was alleged to be the cause of illness of 52 cows and one bull and the subsequent death of two cows.

I was aware that Dr. Bernard Dyer and some other well-known analysts had made examinations of feeding stuffs containing corn cockle seed with negative results with regard to illness. A suggestion was made that experiments should be conducted on certain proportions of corn cockle seed in tare meal in order to note whether illness or death was produced on livestock. The tare meal sent me was found to contain about 2½ per cent. of corn cockle seed. Since each animal got 2½ lb. of tare meal morning and night this would mean that one ounce of corn cockle seed would be consumed morning and night by each animal. A sufficient quantity of pure corn cockle seed was procured from Messrs. Sutton at Reading and experiments were conducted on three bullocks at the North of Scotland College Experimental Farm at Craibstone. From June to September these animals were on grass and were in good health during all that period. The bullocks were fed, firstly, with five pounds of tare meal containing 2½ per cent. of corn cockle seed and then afterwards with five pounds of tare meal containing 5 per cent. of corn cockle seed. Turnips and straw were also fed to the animals. Two veterinary surgeons examined the animals—the late Mr. R. E. Drennan and Mr. H. H. Holman who was then on the staff of the Rowett Institute. The animals took the ration readily and no ill effects were observed by me or by the veterinary surgeons in attendance. The animals drank about three gallons water daily. The corn cockle seed and tares were ground and mixed in my laboratory in the presence of both Mr. Drennan and Mr. Holman. In my report I quoted the results of other experiments on a ration containing corn cockle seed. These experiments were conducted by Mr. Alfred Smetham, Dr. Bernard Dyer and Mr. Stafford Jackson and were reported in *The Analyst*, vol. lii, 1927, pp. 273-275. The report stated that "during the whole of the time of the corn cockle feeding experiments the pigs throve exceedingly and no difference between the pigs in the various sties could be observed on inspection. The final weights showed the fact that the corn cockle pigs had gained slightly more weight than the pigs which had received no corn cockle." My comment on this result was that a small pig could consume over an ounce of corn cockle seed per day with no ill-effects. It was therefore not surprising that the two-year-old bullocks at Craibstone consumed four ounces of corn cockle seed per day without any ill effects whatever. My report contained the following concluding words: "It is well known that several substances act as powerful poisons when taken in certain specific amounts but if taken in minute amounts, are helpful to animal life. Two examples may be cited, namely, arsenic and strychnine. These are regularly prescribed in small amounts as parts of a medicinal dose by medical and veterinary practitioners. If taken in larger amounts they act as poisons. What, therefore, is a poisonous substance to, say, a dairy cow? The answer is the amount of the substance which will cause illness or death or both to the cow. Corn cockle seed in doses of two ounces daily or of four ounces daily in a ration has no ill effects on bullocks and, therefore, cannot be regarded as a poisonous substance in these quantities."

Poultry and Salt

My last note bears on a paper which appeared in the *Veterinary Record*, April 27th, 1935. In this paper I described experiments conducted on poultry, pigs and cattle. We get many cases of illnesses among poultry and we have found in several cases that death was due to excess of salt. It was thought it would be a

useful thing if a series of experiments were conducted on poultry for which part of the ration was salt given in various proportions. The first series of results showed that poultry can tolerate salt to the extent of 5 per cent. of the ration but that higher proportions affected their health, while proportions amounting to 7·5 per cent. or over of the ration caused death. Another series of experiments was conducted on poultry with rations containing from 0·5 to 8 per cent. of salt. The food consisted of bran, sharps, maize, oats, extracted soya bean meal and chalk. No ill effects were noted when the quantity of salt present in the ration was below 3 per cent. The fowls became listless and suffered from scouring when the proportion of salt reached 5 per cent. Two birds died when fed on a ration containing 8 per cent. of salt. Others suffered from severe diarrhoea and recovered when put on a normal ration containing 0·5 per cent. of salt. It is clear from the results that salt is poisonous to poultry when present in the ration to the extent of 5 per cent. and over. One ounce to the pound of food (5·88 per cent.) is distinctly poisonous to fowls and 1·2 ounces to the pound (7·0 per cent.) certainly causes death.

Linseed Cake and Hydrocyanic Acid—Pig Experiments

Experiments were conducted on pigs using linseed cake and also using hydrocyanic acid in capsules. Two pounds of powdered linseed cake were fed to a pig for two days. The total amount of hydrocyanic acid capable of being developed in the linseed cake was approximately 2·8 grains. The pig remained quite normal and showed no evidence of poisoning. Two capsules containing 2½ grains of the acid were now administered to a pig. The pig remained quite normal and showed no ill effects. After administering capsules containing 6·16 grains of pure acid to the pig, the animal died in half an hour.

Potassium Cyanide

The next experiment with pigs was with potassium cyanide. A quantity of potassium cyanide capable of liberating 48 grains of prussic acid was mixed in a ration to a pig. The pig smelt the ration and refused to eat it. After six hours the pig returned and ate the whole of the ration offered to it. The pig showed no ill effects. The reason for this result was that the whole of the prussic acid had been volatilised. A capsule of potassium cyanide containing the equivalent of 48 grains of HCN was now administered to the pig after it had eaten an ordinary ration. The pig died in sixteen minutes.

Linseed Cake

Experiments were conducted on four bullocks. The experiments on the bullocks were made, using linseed cake, in order to ascertain whether a sufficient amount of hydrocyanic acid would be developed to cause illness or death, when young cattle were fed with an ordinary ration containing linseed cake. The four bullocks were fed night and morning with a ration in which each animal got 15 lb. turnips and 2·5 lb. straw. In addition to the turnips and straw each bullock was fed for seven days night and morning with 0·75 lb. of linseed cake in a dry state, containing an amount of glucoside which developed 0·02 per cent. hydrocyanic acid under suitable conditions. Thus each animal consumed night and morning a potential dose of 1·05 grains of prussic acid.

Each animal was now fed night and morning for the succeeding seven days with 1·5 lb. of linseed cake containing a potential amount of HCN of 0·046 per cent. Thus each animal consumed night and morning a potential dose of 4·8 grains prussic acid.

The next experiment lasted 14 days. Each animal was fed with 2½ lb. of linseed cake, once a day at midday, together with turnips and straw as before. The amount of prussic acid capable of being developed from 2½ lb. of linseed cake was 8·05 grains. The linseed cake was crushed and mixed with an equal quantity of maize prior to being fed to each animal. The animals took the ration with evident relish and no ill-effects followed.

The final experiments were conducted with cyanide of potassium in capsules. The amounts of prussic acid capable of being developed from the potassium cyanide were 6 grains and 12 grains respectively. The highest proportion of prussic acid found in my laboratory from linseed cake at that date was 0·049 per cent. Thus 12 grains of prussic acid would be present in 3·5 lb. The result of this experiment showed that a bullock could consume 3½ lb. linseed cake with a potential yield of 12 grains prussic acid with no ill-effects if fed dry as in the experiments conducted by me just described.

Castor Seed

The last series of experiments conducted was with castor seed. Occasionally castor seed husk is found as an impurity in compound cakes. The percentage of husk in castor seed varies from 21 to 30 per cent. It should be noted, however, that no ricin is present in castor husk and, therefore, no deaths can occur if one finds only castor husk in a compound meal. It is only when castor seed itself is found to be present that the danger to the health of livestock occurs. It would take too long to go into the problem of castor seed poisoning but it should be borne in mind that cattle vary very considerably in their resistive power to the poison, ricin, which is present in castor seed.

CONCLUDING REMARKS.

It has been argued that the distribution of a poisonous substance may be unequal in a feeding stuff and, for this reason, even a small proportion of castor seed in a feeding stuff might cause illness or might render the seller liable to prosecution. But only evidence of the actual proportion found on analysis would be admissible in court. The fact that castor seed in fairly high proportion in a feeding stuff may be held in any one case to be the cause of death in livestock, does not mean that unequal distribution of castor seed in feeding stuffs has been proved. Direct proof from the results of analyses of a number of samples from bulk is necessary to establish such a variable condition. Proof of the cause of illness or death is not the mere finding of a trace of castor seed in a feeding stuff but the evidence of experts as to symptoms in illness and, if death occurred, the *post-mortem* appearances. Actual occurrences, not remote contingencies, should be considered. The Fifth Schedule of the Fertilisers and Feeding Stuffs Act provides for legal action *only* in the case of actual occurrences.

Whether or not illness or death occurs, due to the presence of castor seed or other foreign substance in a feed stuff, the legal meaning of (*b*) of the Fifth Schedule of the Act has to be considered. What constitutes a foreign poisonous substance in a feeding stuff? The answer to this question will settle one of the chief problems bearing on the purity of feeding stuffs, namely, the difference between a minute quantity of a poison in which there is no danger to health and the quantity present which would certainly cause illness or death to livestock.

[At the outset of his address, Dr. Tocher characterised it as "rather an informal talk" and asked, therefore, that its "somewhat rambling character" be excused.]

DISCUSSION

The PRESIDENT (Mr. W. J. B. Robson), on opening the discussion, thanked Dr. Tocher for his very interesting and instructive address and said that he hoped the members would have some questions for the lecturer to answer. The subject of poisoning of animals—more especially farm animals—was a most interesting and practical subject and one which was met fairly regularly in practice; and without the analyst's aid veterinary surgeons were often very much in the dark, knowing quite well that the symptoms appeared to indicate that some poison was the cause but very often unable to diagnose the poison which was responsible, unless the case was acute. In such cases the analyst's help was indispensable and he, personally, had been indebted to the analyst on more than one occasion for confirming or, quite often, refuting his own diagnosis.

Mr. D. CUMMING also having expressed his appreciation of Dr. Tocher's address, said that, in the course of his long practice, he had met with cases of poisoning with substances such as lead, arsenic, rhododendron and laurel leaves, and he had been indebted to the analyst on many occasions.

Mr. W. JACKSON YOUNG stated that he appreciated the information furnished by Dr. Tocher. Rightly or wrongly, he considered that the cyanogenetic glucosides had a condimental value and possibly linseed cake owed its valuable properties to them. He would be pleased if any information could be given regarding any foodstuffs or substances that could be added to linseed cake in order to inhibit the formation of hydrocyanic acid.

Clover was blamed for bloating in cattle and he had tested clover for cyanogenetic glucosides by macerating clover in distilled water at blood temperature in flasks from the cork of which sodium picrate paper was suspended. When the paper turned a reddish brown this indicated the presence of hydrocyanic acid.

In order to assist the solubility of sheep dips containing arsenic he had frequently seen sheep dips macerated over night in sacks and rustled through the dipping bath next day. Sacks so used were dangerous and should be buried or destroyed and not returned into general circulation.

Mr. Young concluded by referring to the importance of team work in investigations into alleged poisoning cases and welcomed Dr. Tocher as a member of the team.

Mr. JOHN GRANT said that the only aspect that he was interested in was with regard to poisoning in poultry and the great frequency in which *post-mortem* findings pointed to the existence of some form of poisoning. Even when it had been definitely established that poisoning was the cause of death in poultry it was always difficult to convince the owner that such was the case. He went on to say that salt was a very common cause of such poisoning as it was now added in very large amounts to poultry mixtures by many of the food sellers and it was apt to cake amongst the food mixtures, so that if improperly mixed the chickens were very liable at some time or other to get a dangerous quantity in their food.

Dr. TOCHER, in the course of his reply, said that he had been very pleased to come forward to give his address and present some of the more interesting cases which had come to his notice, and he would be very glad to help on any future occasion.

CATTLE RINGWORM: FARM WORKERS' COMPENSATION QUESTION

The question whether cattle ringworm should go on the schedule of industrial diseases under the Workmen's Compensation Act, was discussed by the Royal Commission on Workmen's Compensation, when the National Federation of Approved Societies gave evidence supporting the principle of compulsory insurance.

In answer to the Chairman (Sir Hector Hetherington), Mr. H. H. Leeming, of Reading, for the Federation, said they had had definite cases of cattle ringworm which had been brought about through the employment.

Mr. Bennatyne, of the Home Office (a Commissioner) said that the question of cattle ringworm had been discussed before, in conjunction with the Ministries of Health and Agriculture, and they had decided not to schedule it on the ground that it was only of a few days' duration. —*Farmers' Weekly.*

The Veterinary Record

July 29th, 1939.

Diseases of Foals

ALTHOUGH the economic importance of diseases of foals has long been recognised, it is only within comparatively recent years that any headway has been made in knowledge of the causative factors at work.

In the spring of 1916 Sir John M'Fadyean, working with *B. abortivo-equinus*, in co-operation with practising veterinary surgeons, started investigations regarding abortion in mares and joint-ill in foals and the production of a specific antiserum. Up to that time the only published account of an attempt to produce a specific serum for the prevention or cure of abortion or joint-ill is contained in an article by Good and Smith in America. Investigations soon showed that *B. abortivo-equinus* was only responsible for a small proportion of the cases and that the bacteria encountered fell into four main groups of which streptococci were by far the most important, thus confirming the contemporaneous work of Magnusson. An anti-streptococcus serum and later a vaccine were substituted for the one already in use and made available to country practitioners for use on foals and pregnant mares during the foaling seasons 1919 to 1922.

The published reports of M'Fadyean, Edwards and Sheather were valuable not only as a record of their own researches but for records of work conducted in Europe and North America during the same period, for it can be said that the years 1914 to 1922 were years rich in research into foal septicaemia and although the results of the serum and vaccine inoculations were generally disappointing, they did establish with certainty that there were several separate and distinct causal bacterial agents.

From this time onwards, with the exception of the consistent work of Dimock and his co-workers in America, there appears to be a surprising dearth of research information available to the clinician in this country. It seems nothing short of a tragedy that the work so ably begun at the Royal Veterinary College was not continued. Apart from any direct laboratory research the continuance of recording of statistics would have been of the utmost value as a foundation for work started at any time. For instance, if the incidence of the disease was only 2·8 per cent. for the country as a whole in 1920 to 1922, it would be of direct value to know if this was remaining stationary or otherwise or how it compares with the incidence in intensive heavy horse-breeding districts. In the experience of some practitioners it would now appear to be nearer 25 per cent. It would also be of interest to have a reliable comparison of the mortality rate of pedigree foals as compared with common foals or of heavy horses as compared with thoroughbreds. There is no reliable information as to the average age at which foals affected with the different varieties of causal organisms die after birth. It would be of interest to know what value, if any, can be placed on ligation of the navel as conducted by the average layman. It would be of exceptional value to know the real significance of infection with the organisms causing abortion in mares; if it is not a serious cause of joint-ill it is an important cause of foetal mortality.

Regarding the experimental aspect, the consensus of opinion of the research workers up to 1923 was that the disease almost universally was of post-natal origin. This view is in striking contrast to the more recent researches of Dimock. He holds the view that streptococcus infection as a cause of navel-ill in foals is usually if not always a pre-natal infection, therefore for preventive measures to be effective they must be undertaken before the mare foals. He also holds the view that this same streptococcus is an important cause of abortion in mares.

Furthermore, Dimock places *Shigella viscosa* (*Bacillus viscosum equi* or *nephriditis equi*) in a far more prominent position than did the older workers and is of opinion that it lives saprophytically in the tonsillar crypts and digestive tract of equines and invades the tissues of the foetus before it is born; also that there is considerable evidence that *Strongylus vulgaris* is a factor in the infection of older foals.

Enough has been said to emphasise the pressing need for further research into diseases of foals in this country. For example, the possibilities of sulphanilamide in the treatment of joint-ill caused by the several varieties of causal bacteria should be trustworthily explored. The dependence needs to be investigated of the infections upon the properties of the colostrum ingested immediately after birth, whether in antibody content or nutritional

ingredients, as has been suggested in other recent researches. It is to be hoped that the excellent article on foal diseases by Dr. Fraser appearing in this current issue will stimulate an immediate revival of interest and an intensive and organised campaign, by veterinarians in horse-breeding districts on the one hand and laboratory workers on the other.

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Spurious Remedies

THE farmer, like all other human beings, is apt when he is harried by disease to be persuaded into believing that there is at least some truth in the exaggerated claims made for various proprietary products which are offered him. Medicaments sold by manufacturing chemists may be divided into two groups: those which are of true value in human or veterinary medicine, and those which are valueless. The true chemical nature of the first group of products is usually disclosed, but the second group is often described only by a proprietary name, accompanied by sweeping assertions of its alleged value in the treatment of disease.

Unfortunately it is often the more serious diseases for which there is no simple mode of prevention or quick cure, and it is in this field that the less reputable manufacturer and salesman finds a comparatively ready market for his much-advertised but spurious remedy. Several diseases of farm stock are not amenable to rapid treatment, but con only be eradicated or controlled by the adoption of a reliable and often expensive system of management. A farmer faced with such a situation is loath to be persuaded to purchase a concoction with high remedial claims, but when this product appears to be coupled with adequate guarantees or insurance against losses, then it is few that withstand the wiles of the salesman.

The disease which has latterly appeared most popular for this kind of approach by medicine vendors is contagious bovine abortion. Recently, as revealed in these columns last week, as the result of an action at law it has become established that one of these proprietary remedies is, to quote the Judge, "little different from a concoction of coloured water, so far as clearing out this disease is concerned." It is pleasing to record that the National Veterinary Medical Association was able to help the farmer concerned in his defence. The Judge described the product as "a swindle," and it is to be hoped that the disclosures made will render further service to other persons who are worried by this disease in persuading them that there is no short cut to its control in their herds.

CLINICAL COMMUNICATION

A Case of Neurolymphomatosis in a Turkey

C. H. ANDREWES and R. E. GLOVER

(From the Farm Laboratories of the National Institute for Medical Research, Mill Hill, London, N.W.7)

In April, 1939, one of us (C.H.A.) saw a partly paralysed cock turkey on a small farm in Dorset. The bird had been purchased as an adult at a local market in December, 1938. It was then kept along with two hen turkeys at an isolated farm where there were no chickens. Fowls were, however, kept at another farm belonging to the same owner about two miles away, and fowl paralysis had occurred among them. The cock turkey in question was apparently normal on April 10th, 1939, but about April 15th it was noticed to be partly paralysed in the right leg. This paralysis increased and spread about a week later to the left leg. Within a few days it was almost complete in the legs and involved both wings also. On April 28th the turkey seemed likely to die very shortly; it was therefore killed and sent to Mill Hill for examination, the *post-mortem* examination being made and tissues fixed on the same day. The farmer reported that this turkey had been purchased in 1938 because the cock turkey previously kept at the farm had had to be killed on account of a condition which showed some similarity to fowl paralysis.

The *post-mortem* examination showed the following changes. The spleen was slightly increased in size and paler than the normal. The liver was enlarged, pale and of a putty-like consistency, but the lobulation was distinct and no lesions were visible to the naked eye. The right sciatic nerve was appreciably enlarged and measured about 1·0 cm. in diameter at its junction with the cord: the left sciatic was also enlarged but to a smaller extent. Both brachial plexuses were thickened. A portion of the vastus internus muscle was abnormally pale, the fibres presenting a greyish white and glistening appearance. No lesions were found elsewhere in the carcase.

Sections of the brachial and sciatic nerves showed an extensive cellular infiltration representative of the final stage of fowl paralysis, *i.e.*, there were a few lymphocytic cells, but the majority were large cells with pale nuclei which probably arose as a result of proliferation of the fixed elements. In the liver, the hepatic cells were poorly stained, while the sinusoids were crammed with lymphocytic cells. Sections from the affected muscle showed a marked disintegration of the fibres. In many places the bundles were widely separated, the cavities thus formed being filled with a variety of cells. This infiltration was due partly to the migration of polynuclear and lymphocytic cells, and partly to the proliferation of the interfascicular alveolar tissue. The picture was strongly suggestive of a chronic inflammatory condition.

We have been unable to trace any record in the literature of the occurrence of fowl paralysis in turkeys. One of us (C.H.A.) did, however, see the typical lesions of neurolymphomatosis in the sciatic nerves of a pheasant in 1932. This bird had been kept at the Medical Research Council's Farm Laboratories at Mill Hill for 16 months before leg weakness was observed. The causation of the disease is obscure in this instance as the bird had been repeatedly inoculated with filtered and unfiltered fowl tumour material during the preceding months. Downham (1939) has stated that during the routine *post-mortem* examination of turkeys several cases were encountered in which collections of lymphoid cells were found in the liver and caecum. No mention is made of lymphomatous changes in the nerves. Jungherr (1939) has lately described the disease in pheasants in the U.S.A. under the name of "neurolymphomatosis phasianorum." He noted that in addition to characteristic lesions in the sciatic nerves, liver, kidney, etc., degenerative changes were not uncommon in the voluntary muscles, more particularly those of the leg. Jungherr describes a waxy or hyaline degeneration accompanied by oedema and an increase in fibroblastic and histioblastic elements between the bundles. The description which he gives tallies quite closely with the changes which were observed in the turkey. Harriss (1939) encountered a lymphocytic infiltration of both vagus nerves and the brachial plexus of a pheasant reared artificially and inoculated when 14 days old with nerve tissue from a case of paralysis in fowls.

The case recorded is probably an example of neurolymphomatosis in the turkey. The origin of the infection is obscure, since the bird was purchased in open market and its antecedent history is, therefore, unknown. During the past season, the cock was used as a stock bird, and it is proposed to obtain information on the behaviour of its progeny to determine whether the affection has been transmitted to the young stock.

References.

Downham, K. D. (1939). *Vet. J.* **95.** 89.
Harriss, S.T. (1939). *ibid.* 104.
Jungherr, E. (1938). *J. Amer. vet. med. Ass.* **94.** 49.

ABSTRACTS

[Lead Poisoning and its Importance for Cavalry. (Trans. title.) Otto. (1938.) *Zschr. Veterinärk.* **50.** 554-568.]

Lead poisoning is particularly common in districts where lead mining is undertaken, as a result of contaminated water discharged from the mines entering the drinking supply and also from lead dust covering the vegetation.

Animals may suffer from acute or chronic poisoning. In acute cases, gastro-intestinal symptoms appear first and are most marked, then general symptoms of poisoning appear: small weak pulse, muscular weakness, tremors, etc. Death may occur within 24 hours but illness usually lasts about a week. In chronic cases the most prominent symptoms are peripheral neuritis, the animal becomes a whistler and later there is pronounced respiratory distress. On *post-mortem* examination the most pronounced changes are found in the liver and kidneys which show fatty degeneration and chronic interstitial inflammation. Lead can be detected in the blood serum. Treatment is of little value, aperients should be freely used.

J. A. N.

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[A Case of Thrombosis. (Trans. title.) Wurfschmidt. (1938.) *Zschr. Veterinärk.* **51.** 25-31. 37 refs.]

Following a period of about four months' enforced idleness owing to severe strain of a fetlock joint, a nine-year-old draught horse, when put to work, showed symptoms indicative of thrombosis of the termination of the abdominal aorta.

The appearance of lameness that became progressively worse, arrest of progress and collapse, accompanied by sweating, dyspnoea and groaning, seemed at first to suggest paralytic myoglobinuria. However, there was rapid abatement of symptoms, the urine was normal, and on rectal examination the external iliac and hypogastric arteries on both sides were found to be thickened, hard and painful.

Complete rest in a box for 14 days, succeeded by exercise in gradually increasing amount, was supplemented at first by injections of fibrolysin. As, after four weeks, this appeared to have had

little beneficial effect, it was replaced by intravenous injections of Sklerostomex, diluted 3 in 40 in physiological salt solution, given eight times with intervals of seven days between injections. Spectacular recovery followed and six months after admission the horse was discharged as cured.

Clinical symptoms are described at length and the literature is reviewed.

J. W. W.

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[Contribution on Pharyngeal Paralysis of the Horse. (Trans. title.) Witzigmann, J. (1939.) *Deuts. tierärztl. Wschr.* 1939. 14. 213-214.]

One case of pharyngeal paralysis following strangles is described in the horse. Treatment included the injection of strychnine nitrate (0·05 to 0·06 grammes daily subcut.) and Neuro-Yatren (15 to 20 grammes every second day i/m.) as well as daily injections of glucose (50 c.c. of a 20 per cent. solution i/v.) and the use of medicated inhalations. Recovery was complete 24 days after commencing treatment.

W. M. H.

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[Induced Cases of Traumatic Gastritis and Pericarditis in Dairy Cattle. Dougherty, R. W. (1939.) *J. Amer. Vet. Med. Assoc.* **94.** 4. 357.]

Attempts were made to satisfy a long-felt need for more accurate means of diagnosing traumatic gastritis in cattle by some comparatively simple laboratory method. Experimental traumatic gastritis was induced in three cows. The foreign body was a piece of bailing wire, sharp at one end and bent at the other to prevent complete entrance. It was introduced *via* a ruminal fistula and pushed through the reticulum. Systemic symptoms were observed after its introduction, but subsequent experimental trauma failed to elicit any marked symptoms.

Haemocytological changes were observed as early as four to six hours after introduction. Blood smears were stained with Wright's stain, and blood changes comprised an increase in total white count from 23 per cent. to 42 per cent. Other blood changes observed were an increase in "stabs," the appearance of "juveniles" and a decrease in lymphocytes. These changes began to subside back to normal three days after trauma. In one case in which pericarditis was induced, in addition to severe systemic symptoms, there was a decrease in rate and amplitude of ruminal contractions, and an increase in sedimentation rate.

Thirty suspected cases of foreign body were examined, and in all but one, the blood picture corroborated clinical findings.

G. V. L.

[Relaxation of the Sacro-Sciatic Ligaments in Bovines. (Trans. title.) Derivaux, J. (1938.) *Ann. Méd. vét.* **83.** 337.]

The author reviews the various theories presented to explain this phenomenon, none of which are satisfactory. In this, his preliminary study of the subject, he has confined his attention to the histology of the ligament together with its degree of humidity. He quotes ten cases in which relaxation of the ligament was associated with pathological conditions of the genital organs, particularly lesions of the uterus, ovaries and salpinx. Moreover, it was only observed in cows over five years.

In the normal ligament, a longitudinal section shows fine, undulating, compressed bundles, the fibres of which are so close that a section has a very compact appearance. Nuclei occupy the centre of the fibre, and are long and flat. Vessels are few and there is no leucocytic infiltration.

In the relaxed ligament, the fibres are widely separated and dissociated, and undulations have almost disappeared owing to lengthening. The nuclei are thicker and longer, and blood vessels are numerous.

The normal ligament contains an average of 61 per cent. moisture, whilst the relaxed ligament contains an average of 71 per cent. Further experiments are contemplated in order to ascertain the mechanism of this process.

G. V. L.

NEMBUTAL ANAESTHESIA IN THE PIG

In connection with the statement made in the editorial "Anaesthesia in Animals" appearing in our issue of July 15th, that quite recently records of the use of nembutal, pentothal and similar preparations in the pig have been published almost simultaneously in this country and America, Mr. H. G. Lamont, of the Veterinary Research Division, Ministry of Agriculture, Northern Ireland, writes as follows:—

"At a meeting of the two Divisions in Ireland in Dublin in 1937 Professor O'Connor gave a demonstration of nembutal anaesthesia in the dog and I informed him that my colleague, Shanks, had been using nembutal anaesthesia for a long time in pigs with very successful results. As a result of requests the latter gave a demonstration on nembutal anaesthesia in pigs at the next joint meeting which was held in Belfast on June 4th, 1938. This fact is recorded in the *Veterinary Record*, September 24th, 1938, number 39, volume 50, at the bottom of page 1261. Neither Shanks nor myself considered the subject to be worthy of a special note for publication, but if there is any priority in the use of nembutal in pigs Shanks certainly has it, as he has been using it for a number of years.

"We have also used soneryl sodium for such operations as amputation of prolapsed rectum, with satisfactory results. We have noted that twitching and shivering which are commonly present in pigs where nembutal is used are absent when soneryl sodium is used. The period of anaesthesia is also shorter and the pig recovers more quickly."

REVIEW

[**Principles of Medical Statistics.** By Dr. A. Bradford Hill (Reader in Epidemiology and Vital Statistics in the University of London). Second Edition. Pub. by *The Lancet*, Ltd., London (1939). Price 6s. net.]

In 1937 we had the pleasure of recommending this book to our readers as a "book dealing with the principles of statistics without delving into long and complex mathematical proofs." As was to be expected the work was soon sold out and the author and publishers have been forced to prepare a second edition.

This, in the main, is a reprint of the first edition but the author has taken the opportunity to add extra paragraphs and examples and to rewrite a paragraph here and there which appeared to require further clarification. He has also added a useful chapter on the usual methods of calculating standardised death rates. These amendments and additions are welcome and still further increase our debt to the author.

We cannot do less than recommend strongly this book to all veterinarians who wish to appreciate the principles of medical and veterinary statistics.

MORE LIVESTOCK FOR RUSSIA

The Moscow Correspondent of *The Times*, in a message dated July 10th, observes that an important agrarian measure announced the day previous is of special interest in connection with the large purchases of livestock at the Royal Show by the Russian Government. "The decree, which is signed by M. Molotoff, as President of the Council of People's Commissars, and by M. Stalin, aims at increasing cattle-raising on collective farms. It provides that the quota of meat to be delivered to the State by collective farms shall be fixed according to the amount of land worked by each farm, instead of according to the numbers of livestock on the farms. This means that agriculturists—both collectivised and individuals—will be obliged either to stock more cattle or to obtain meat in some other way for delivery to the State. The quota required from non-collectivised landholders, whether they have cattle or not, is fixed at twice that required from members of collective farms.

"The chief factors in the present unsatisfactory situation are stated to be the concentration of collective farms on the production of cereals, with attendant neglect of cattle-raising and fodder production. In fact, the scarcity of meat has been serious since the enforced collectivisation of land, which led many peasants to kill their beasts. Every collective farm must now aim at having a cattle farm, a sheep farm, and a pig farm, and in any case will be obliged to have the first two. The decree lays down the minimum number of the class of animals to be kept on every farm, according to its size and situation, and offers rewards for numbers kept in excess of these norms."

Royal College of Veterinary Surgeons

MEETINGS OF COUNCIL

A special meeting of Council, R.C.V.S., was held at the College, 10, Red Lion Square, London, W.C.1, on Thursday, June 22nd, 1939.

Mr. G. H. Livesey (President) occupied the Chair and there were also present: Lieutenant-Colonel J. W. Brittlebank, Professors J. B. Buxton, J. F. Craig, T. Dalling, Messrs. P. F. Dolan, H. W. Dawes, J. Holroyd, G. H. Locke, J. W. McIntosh, G. P. Male, Professor W. C. Miller, Captain T. M. Mitchell, Lieutenant-Colonel W. S. Mulvey, Mr. W. Nairn, Sir Arthur Olver, Captain J. W. Procter, Dr. J. Share Jones, Lieutenant-Colonel P. J. Simpson, Mr. J. F. D. Tutt, Colonel G. K. Walker, Mr. T. Wilson, Professor G. H. Wooldridge, Dr. W. R. Wooldridge and Professor J. G. Wright.

The minutes of the previous special meeting, having been circulated, were taken as read and signed as correct.

Introduction of New Members. — The President formally welcomed to the Council the newly elected members, namely, Professor Wright, Professor Miller, Dr. Wooldridge and Sir Arthur Olver.

Communications Relating to the Loveday Report.—The following communications were received: (*a*) copy of extract from communication proposed to be addressed to the Ministry of Agriculture by the Royal Veterinary College, (*b*) report from the Royal (Dick) Veterinary College to the Department of Agriculture for Scotland, (*c*) Address and Memorandum from the National Veterinary Medical Association.

The Council resolved itself into committee

In Committee.

The question was asked whether any communication had been received from the Liverpool University, and the President replied that no communication had yet been received.

Mr. Nairn moved and Professor Craig seconded, "That the Committee proceed to consider the last item on the Agenda, namely, the preparation of a final report on the Loveday Report."

This was put to the meeting and carried.

At the President's request the Secretary summarised the proceedings of the Council on the matter up to the present for the benefit of the new members of Council.

Colonel Walker moved that a rider be added to the resolution passed by the Council in November, 1938, relating to the proposal of the Loveday Committee that the constitution of the Council should be amended, namely, "The

Council is prepared, however, to appoint an Educational Consultative Committee, to which would be co-opted representatives of the Universities concerned and the affiliated Veterinary Colleges and other educational experts, to advise on matters referred to it by the Examination Committee."

An amendment to this motion proposed by Dr. WOOLDRIDGE and seconded by Professor WRIGHT, to the effect that the resolution on the matter passed in November be re-opened for discussion was debated and afterwards withdrawn on its being explained that this would not prevent further debate.

Colonel Walker's motion was further discussed and at 12.30 p.m., on the suggestion of the President, the meeting was adjourned.

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There were present: Mr. G. H. Livesey (President) in the Chair; Lieutenant-Colonel J. W. Brittlebank, Professors J. B. Buxton, J. F. Craig, T. Dalling, Messrs. H. W. Dawes, P. F. Dolan, J. Holroyd, G. H. Locke, Sir John M'Fadyean, Messrs. J. W. McIntosh, A. MacKenzie, G. P. Male, Professor W. C. Miller, Captain T. M. Mitchell, Lieutenant-Colonel W. S. Mulvey, Sir Arthur Olver, Captain J. W. Procter, Dr. J. Share Jones, Lieutenant-Colonel P. J. Simpson, Captain W. K. Townson, Mr. J. F. D. Tutt, Colonel G. K. Walker, Mr. T. Wilson, Professor G. H. Wooldridge, Dr. W. R. Wooldridge and Professor J. G. Wright.

FIRST MEETING

Report of Registration Committee.

The following report of the Registration Committee was received:—

At a meeting of the Registration Committee held on Thursday, June 22nd, 1939, Mr. Peter Meikle appeared on a charge that he had signed a tuberculin test certificate in respect of work which he had not in fact personally carried out. Mr. Meikle was represented by his solicitor, Mr. W. Gartshore Scott.

Mr. Scott on behalf of Mr. Meikle admitted the offence, and expressed his regret.

They were then asked to withdraw.

It was resolved, "That the Committee find the complaint made against Mr. Meikle proved to their satisfaction, namely, that he signed a certificate in respect of work, part of which was carried out by unqualified persons."

It was resolved: (*a*) "That, Mr. P. Meikle having been proved to have signed a certificate in respect of work, part of which had been carried out by unqualified persons, he has, in the opinion of the Council, been guilty of conduct disgraceful to him in a professional respect," (*b*) "That the Council do now proceed to pronounce their judgment in the case."

Before pronouncing judgment Mr. Meikle and Mr. Scott were recalled and informed of the Council's decision. Mr. Scott addressed the Council on behalf of Mr. Meikle and expressed regret at the occurrence. He promised that he would be careful in future that no such action should be repeated.

The parties again withdrew.

It was resolved, "That Mr. Meikle be severely censured and warned as to his future conduct."

Mr. Meikle was then recalled, and the President informed him that in the opinion of the Council his conduct was deserving of the severest censure. He warned him as to his future behaviour and stated that the documents in the case would be filed and would be taken into account if any similar complaint concerning his conduct as a veterinary surgeon should be substantiated in the future.

The parties then withdrew.

SECOND MEETING

Report of Registration Committee.

The following report of the Registration Committee was received and adopted:—

At a meeting of the Registration Committee held on Thursday, June 22nd, 1939, Mr. W. Wallace Peggie appeared on a charge that he had signed certain veterinary certificates in respect of work carried out by another member. Mr. Peggie was represented by Mr. Maxwell Fyfe, K.C., assisted by Mr. Senter, and solicitor.

Mr. Fyfe on behalf of Mr. Peggie admitted that the complaint made against Mr. Peggie was true in fact, but stated that he wished at a later stage to lay before the Council considerations in extenuation of the offence.

The parties then withdrew.

It was resolved, "That the Committee find that the complaint made against Mr. W. W. Peggie has been proved to their satisfaction, namely, that he signed veterinary certificates in respect of work carried out by another member."

It was resolved, (*a*) "That Mr. W. W. Peggie, having been proved to have signed veterinary certificates in respect of work carried out by another member, he has, in the opinion of the Council, been guilty of conduct disgraceful to him in a professional respect," (*b*) "That the Council do now proceed to pronounce their judgment in the case."

Before passing judgment Mr. Peggie and his Counsel were recalled and informed of the decision of the Council.

Mr. Fyfe then addressed the Council in explanation of the circumstances in respect of an incapacitating accident, which had led Mr. Peggie to arrange for the work in question to be done by another member, and pleaded that if in fact there had been a breach of the By-laws it was unintentional and partly under a misapprehension, and that no public harm had followed.

The parties were then asked to withdraw.

After further discussion it was resolved "That Mr. Peggie be informed that the Council had given full consideration to his explanation and to the plea made on his behalf, but adheres to its previous decision, and expresses its grave disapproval of his conduct."

The parties were then readmitted and the President communicated to Mr. Peggie the Council's decision.

He concluded by thanking Mr. Maxwell Fyfe on behalf of the Council for the manner in which he had conducted his case.

It was resolved, "That the Secretary be instructed to communicate with the Ministry of Agriculture drawing attention to the desirability of amending the wording of the certificates required to be signed by veterinary surgeons in respect of tuberculin tests and clinical examinations."

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QUARTERLY MEETING OF COUNCIL

A quarterly meeting of Council of the Royal College of Veterinary Surgeons was held at 10, Red Lion Square, London, on Friday, June 23rd, 1939. Professor G. H. Wooldridge, President, occupied the Chair.

The minutes of the previous meeting were taken as read and signed as correct.

Obituary.—The Registrar read the list of deaths recorded during the quarter, the members standing while the list was being read.

Petition from a Former Member

The Registrar submitted a petition from Mr. W. P. Ruthven, praying that the decision of the Council to remove his name from the Register might be reconsidered. The Registrar explained that on the receipt of the petition the question was considered whether Mr. Ruthven should attend so as to be ready to appear before the Council, if the Council so decided. The President had decided that most probably the Council would not wish to refuse this gentleman a hearing, so he was present with Counsel, Mr. Aiken Watson, to appear before them in support of his petition, if they so decided.

On the motion of the President, the Council went into committee.

On resuming, Mr. Ruthven and Mr. Aiken Watson were admitted to the Council Chamber.

The President: Mr. Watson, before you proceed may I point out that it is not permissible to re-open this case in any way. The Council has consented to hear Mr. Ruthven, as represented by you, entirely on the terms of the petition which has been presented.

Mr. Watson: I understand that perfectly, if I may respectfully say so, and I had no intention of endeavouring to re-open the matter, for two very good reasons. The first is that I have not seen a transcript of the proceedings in Edinburgh and I have no reason to suppose, knowing they were attended by your learned Registrar, that anything took place at those proceedings which was otherwise than perfectly regular and perfectly fair to my client. So far as those proceedings are concerned, I only wish to say this. As has been said in the petition, unfortunately my client was not professionally represented at the Inquiry and some of the questions which might conceivably have been put to the witnesses to bring out the true explanation of the matters whereof he was charged were not put. Beyond that I cannot say anything about the Inquiry, and I have advised my client that so far as the findings of the Inquiry are concerned, that is a closed matter. He appears before you to-day to throw himself upon your mercy and to ask that he may be relieved of the penalty which has been imposed upon him.

Having regard to the findings, which I cannot challenge, it would be idle for me to suggest in any way that the matters which led up to those findings could be seriously challenged. There is one observation I would like to make upon the matter. It appears that two days after the events which led up to the prosecution of the complaint before the Council the dog which was the subject matter of the complaint was examined by another Member of this College. I make no attempt to make any reflection on the matter, but I think it might conceivably have enabled a better view of the matter in dispute to have been taken if that member had at once communicated with my client.

The President: Mr. Watson, I hesitate to interrupt you, but this is getting perilously near re-opening the case and I would ask you very kindly not to do it.

Mr. Watson: You will observe, Sir, if I may say so, that I am making no complaint with regard to the findings. I am merely pointing out that if in certain circumstances another member of the Society to whom the matter went two days later had communicated with him, explanations might have been open to my client which could not subsequently be made.

As you know, the result of the findings of the Inquiry was that my client's name was removed from the Register. I need not point out to you that in a case of that kind, particularly in the Provinces, the loss of professional status is a very serious matter indeed for a veterinary surgeon. It is quite true that it is still open to him to obtain employment of some kind under certain disabilities which I need not mention, but you will appreciate that in a place like Scotland for a man to cease to be able to use the letters M.R.C.V.S. to all practical intents and purposes means the end of his life as a veterinary

surgeon. In this particular case not only has it meant that, but it has further meant this. In the position in which my client was he was carrying on a practice which had been carried on for two generations, I am informed, by Members of this College. That practice was being carried on by my client for the benefit of the widow of the late Mr. Knight, a Member of this College. My client having been in the practice for several years, it is almost impossible in the circumstances that someone should take over the practice successfully; indeed, there would be very little point in it, because someone could very easily start on his own. There would be very little point in anyone attempting to take the practice over from Mrs. Knight. The result is that not only is my client being penalised but also the widow of a very respectable Member of this College.

In those circumstances it is quite clear that my client has been taught a lesson, and a lesson which he will long remember. I do most respectfully urge the Members of this Council, in the light of the explanation which has been given and the apology which I am instructed to tender to you for any apparent lack of courtesy on the part of my client in not coming to the meeting of the Council at which his name was removed, and having regard not only to the penalty which is directly imposed on Mr. Ruthven but also to that which is indirectly imposed on Mrs. Knight, to reconsider the matter, and if you see fit, to remove the ban which has been placed on him.

I do not think I can usefully say anything further to assist you in your deliberations. I should add that my client is very grateful for the opportunity you have given him of appearing here with counsel to put this presentation of the case before you.

The PRESIDENT: Mr. Ruthven and Mr. Watson, we have listened very attentively to the address on behalf of Mr. Ruthven. I am quite sure that the Council will consider it very carefully. That will be done subsequently to this particular meeting and the result of their deliberations will be communicated to Mr. Ruthven.

On the motion of Mr. TUTT, seconded by Colonel MULVEY, the Council went into committee. On resuming, it was proposed and seconded that no further action should be taken at the moment. The motion was carried.

CORRESPONDENCE

The SECRETARY: I have to announce that letters of apology for absence have been received from Mr. Donnelly, Major Mattinson, Captain Simpson and Sir Frederick Hobday, or rather from Sir Frederick Hobday's son, Dr. Hobday. Captain Simpson states that although he has been ill since the previous quarterly meeting he is now recovering but it may be some months before he is really better.

I regret to say that from Dr. Hobday's letter it is evident that his father's condition is causing much anxiety.

It was agreed that expressions of the Council's sympathy in their continued illness should be forwarded to Sir Frederick Hobday and to Captain Simpson, with sincere wishes for their restoration to health.

The SECRETARY announced that a letter had been received from the National Milk Publicity Council asking the Council to nominate a representative. It was moved by Lieutenant-Colonel BRITTLEBANK, seconded by Mr. MALE, that Professor Buxton should be re-appointed. The motion was carried.

The SECRETARY announced that the Home Office had invited the Council to appoint representatives to attend a special Committee to report on Witnesses' Allowances. It was agreed that the representatives should be the President, Mr. Male, Lieutenant-Colonel Brittlebank and either or both of the legal officers of the Council.

Reports of Committees

Finance and General Purposes Committee.

Mr. NAIRN presented the following report of the Finance and General Purposes Committee and moved its reception and adoption.

The minutes of the previous quarterly meeting, having been printed and circulated, were taken as read and signed as correct.

Quarterly Financial Statement.—The Treasurer submitted his financial statement for the quarter showing a balance in hand of £403 17s. 7d. and liabilities amounting to £564 16s. 3d.

The Treasurer's statement was adopted and he was ordered to pay the liabilities shown, together with cheques for current expenditure.

Annual Fees.—The Secretary submitted the cases of five members in arrears with annual fees and was instructed as to the action to be taken in each case.

Assistant Librarian.—The appointment of Miss Mary Raymer as Assistant Librarian at a commencing salary of £3 per week as from June 12th, 1939, was confirmed.

Mr. Dollar's Portrait.—The Secretary reported that with the approval of the President and Chairman he had had the frame of Mr. Dollar's portrait repaired and renovated at a cost of £2 19s. 6d.

The action taken was approved.

President's Chain.—The estimate of Messrs. Le Roy et Fils for the provision of two extra shields and links to the President's chain at a cost of £13 9s. 6d. was accepted.

Jubilee Memorial and Steel Memorial Funds.—The Secretary announced that the balances in hand in these two funds had been invested in the purchase of Consols to be added to the capital of the funds and that the new investments had been transferred in the name of the Official Trustees of Charitable Funds.

Caretaker's Kitchen, No. 9.—The Secretary reported that with the approval of the President

and Chairman he had authorised repairs to the caretaker's kitchen at a cost of £8 5s. 0d.

The action taken was approved.

Heating Apparatus.—The Secretary was instructed to arrange for the heating installation at No. 10 to be periodically overhauled, by contract.

Centenary Celebrations. — The President suggested the importance of making early preparations for the celebration of the centenary of the College which would take place in the year commencing July, 1943.

It was resolved to recommend, "That a small committee be appointed to make suggestions as to how best arrangements should be started to celebrate the centenary of the College."

Secretariat.—Instructions were given that this matter be placed on the agenda for the next meeting.

Major Dunkin: I do not know whether you will rule me out of order with regard to points arising out of the report, but you will recollect that I moved, and it was carried, that the reports of the Committees should be printed and circulated in order to ease the situation with regard to Chairmen having to read out long reports. I raise that question now, although it does not arise directly on this report. As the matter stands at present the Chairman cannot simply move the reception and adoption of the report so that the matter shall be open for discussion straight away. I am referring to other long reports which have to come before us; the Chairmen have to stand up and read them, when we have the matter in print in front of us.

The President: I see a difficulty there. There may be reports of certain Committees on which other Members of Council were not sitting, and as the printed reports only appear immediately before the Council meeting they cannot be conversant with them unless they are read.

Major Dunkin: I would suggest that in a case like that the Chairman simply calls attention to the important paragraphs.

The President: That does not arise in regard to the present report.

The motion was carried, and the report was adopted.

The President: Arising out of this report, in respect of the proposed centenary celebrations you have decided to appoint a small Committee to consider what arrangements can best be made for celebrating the centenary of the College. Will you therefore please nominate a small Committee?

Mr. Dawes proposed the President, the Vice-President, the Treasurer and the Chairman of the Finance Committee.

Lieutenant-Colonel Brittlebank: May I suggest that the word "small" be removed and that the whole Council be constituted a Committee for this purpose. After all, it is a very important matter. It is true it is a long way ahead, but surely you want everybody's views on this matter. It would be quite easy to constitute the whole Council a Committee for this purpose and it would be very welcome to have their views.

Professor Share Jones: I think it is a thing with which the whole Council should be in touch throughout.

Lieutenant-Colonel Brittlebank: I look at it in this way. Such a celebration can be no paltry matter and the views of the whole of the Council should be sought. It really wants something which is epoch-making if the celebrations are to be carried on at all. If not, it would be better to leave it alone and forget it.

Professor Craig: I take it that this small Committee is only intended to make suggestions to the Council, and then another Committee will be formed—consisting perhaps of the whole Council—to deal with the preparations for the celebrations.

Mr. Dawes: Would not it be better to let the full Council express their views first of all and then form a small Executive Committee afterwards?

The President: I do not think there can be any objection to that at all. I have a proposition and an amendment. The proposition is that a small Committee, consisting of the President, Vice-President, Treasurer and the Chairman of the Finance Committee, should be constituted. The amendment is that the Committee shall consist of the full Council. I put the amendment first.

The amendment was carried. It was then put as a substantive motion and was carried.

Examination Committee.

Major Dunkin: May the report be taken as read?

The President: I must take the decision of the Council on that point. Is it the wish of the Council that the Chairman gives us a summary of the report instead of reading the whole report?

This was agreed.

Major Dunkin summarised the report and moved its reception and adoption. Mr. Tutt seconded the motion.

The report is as follows:

The minutes of the previous meeting, having been printed and circulated, were taken as read and signed as correct.

Reports of Sub-Committees:

(*a*) *Mature Age Candidate.*—The Sub-Committee recommend that candidate No. 6421 be registered as eligible in respect of general education.

The Sub-Committee's recommendation was adopted.

(*b*) *Examination Syllabus Sub-Committee.*—The Sub-Committee recommend:—

(1) That the revised syllabus for the first three years of the course, with a few verbal amendments to be included after consultation with the Examiners, be submitted to the Council for adoption.

(2) That no amendment be made to the present syllabus in Pharmacology for the time being.

(3) That the date of coming into operation of the revised syllabus for the first three years be fixed as October, 1940.

It was resolved, "That the recommendations of the Examination Syllabus Sub-Committee be approved."

Pathology Examination.—The following recommendation of the conference on the Pathology syllabus was submitted for reconsideration:—

"That this meeting strongly recommends that the subject of Veterinary Pathology should be taught for two years and the examination held at the end of the fourth year."

After full discussion it was resolved, with one dissentient, "That the provision made in the revised syllabus for the examination in Pathology and Bacteriology to be held at the end of the third year be adhered to."

Animal Management Examination.—Reports of the Delegates and Examiners on the Animal Management Examination held from May 9th to 26th were received and approved.

It was resolved, "That the suggestion made by the Examiners as to the provision of live animals be transmitted to the respective schools."

D.V.S.M. Examination.—Reports from the Delegate of the Council and the Chairman of Examiners on the D.V.S.M. Examination held at Glasgow from June 12th to 14th were received and approved. Four candidates entered and three obtained the Diploma, namely, S. Forrest, D. I. MacAllister and A. Wilson.

Military Service: Concessions to Students.—The President reported that representations had been made to the Government in regard to the position of veterinary students under the Military Training Act, and that it had been announced that veterinary students would be entitled, in the same way as University students, to postpone their military training until after the conclusion of the Final Examination for the Diploma.

Summer Examination Arrangements.—The Secretary reported that the arrangements for the summer examinations were now in course of completion, and that the oral and practical examinations would extend from July 3rd to July 24th. Owing to the inability of Major Pryer to undertake the duties of Examiner in Surgery, Major Glyn Lloyd had been appointed to take his place.

The appointment of Major Glyn Lloyd as interim Examiner in Surgery was approved.

Educational Certificates.—A list of educational certificates Nos. 6389 to 6419 was submitted and approved.

Exemptions and Concessions.—It was resolved, "That exemption from the First Year course be granted to the following candidates: Nos. 13, 14, 15, 18 (in respect of Chemistry and Physics only), 19, 20 (in respect of Biology only)."

An application was received from A. Rath, a veterinary student of Leipzig and Berne, for exemption from part of the veterinary course, and it was resolved, "That this applicant be informed that no exemption can be granted, but that he is eligible if he so desires to be registered as eligible in respect of general education to commence the veterinary course."

An application from a candidate who had passed the examination of the University of Edinburgh in the subject of Parasitology, for exemption from the College examination in that subject, was refused.

An application from a veterinary surgeon holding the degree of Dr. Med. Vet. (Vienna), for a concession was considered. The Secretary was instructed to add his name to the list of candidates seeking admission to this country which has been submitted to the Home Office.

D.V.S.M.—It was resolved, "That Mr. J. C. Taylor be exempted from the provisions of By-law 106 (3)."

Internal Examiners.—It was resolved, "That the nomination of Mr. H. V. Hughes as Internal Examiner in Anatomy, and Major A. B. Mattinson as Internal Examiner in Surgery at Liverpool be approved."

Refugees.—The Secretary reported that he had submitted lists of applications from foreign veterinary surgeons desiring to enter this country or one of the British Dominions to the respective Government Departments, but had not yet received any reply.

Matriculation Certificates.—The Secretary submitted correspondence showing the variety of standard of pass required for admission to different University Faculties, and the question of the revision of the College regulations was considered.

It was resolved, "That the consideration of the matter be deferred."

On the motion of Professor Craig, seconded by Lieutenant-Colonel Brittlebank, the Council went into committee.

On resuming, Dr. Wooldridge said: I would like to have further information as to the meaning of the first of the recommendations of the Examination Syllabus Sub-Committee. It is stated that the revised syllabus for the first three years of the course, with a few verbal amendments to be included after consultation with the examiners, will be submitted to the Council for adoption. Might I ask whether that means that the syllabus as circulated will become binding after the report of this Examination Committee is passed, or whether the members of this Council are at liberty to discuss the actual syllabus which has been circulated? There are several matters on the circulated syllabus which I should like to put before the Examination Committee for consideration to see whether they would be willing to adopt them. I would like to know whether, if this report is adopted now, I am precluded from making those suggestions. The only reason I do not make the suggestions now is that it would take up the time of the Council unnecessarily. As they are going to reconsider points coming from the examiners they might be prepared to consider points raised by members of this Council at the same time.

The Secretary: The few verbal amendments were mainly alterations of spelling, the rearrangements of capitals, substituting scientific terms for common terms and so on. The subjects of the curriculum for the first three years have been adopted; it is the detailed syllabus of each subject which is now coming up for adoption.

Dr. Wooldridge: I was going to make suggestions for the inclusion of what many

members of this Council would consider trivial matters. Take the Chemistry syllabus; you have stated in the organic section a number of acids and there is one very important one which is omitted, from the point of view of those who go on to Physiology and Biochemistry. Those sort of things might be considered as wasting the time of the whole Council if I can have an opportunity of putting them to the Examination Committee. I have several other suggestions, but to discuss those points here to-day would perhaps be wasting the time of the Council.

Professor BUXTON: That is merely an alteration of detail. At the present moment the matter is under consideration by all internal and external examiners in respect of detail. Therefore the matters which Dr. Wooldridge wishes to raise could be considered at the time of the final polishing up.

Professor SHARE JONES: The points which Dr. Wooldridge wishes to raise are not fundamental alterations. They are additions here and there of points of detail. There is no reason whatever why it should not be taken now in a very few minutes.

The PRESIDENT: I would suggest that if Dr. Wooldridge submits these in a communication to the Secretary, they will be circulated to the teachers and examiners, for their consideration and they would be inserted if agreed upon.

Dr. WOOLDRIDGE: I would like to know whether the decision under Anatomy has been adopted by the Council quite definitely, that is that the candidates will be required to show a knowledge of the entire anatomy of the horse. I am sure you have very carefully considered the suggestions which have been put forward to the effect that the dog might become the type animal. I would like to move that the dog be the type animal, together with a thorough dissection of the limbs of the horse, but if that matter has already been definitely settled there is no point in my re-opening it. It is stated in one of the reports of that Committee that the teaching of physiology shall be included in the first year. To me, that is a fundamental mistake because there is so much to do in the first year in chemistry and physics. I take it that the actual arrangement of the teaching is really nothing to do with this Council; the teaching is the function of the various schools.

The PRESIDENT: A suggestion may be made by this Council, but we cannot take any more serious steps on that. I think I am right in saying that the problem of the dissection of the horse and the dog was very fully considered, after collaboration with the examiners and teachers, before the decision was arrived at. I see no reason why it should not be re-opened if any evidence can be brought to support it.

Dr. WOOLDRIDGE: I should like to adopt your suggestion, if I may.

The PRESIDENT: If you communicate these amendments and suggestions to the Secretary they will be submitted to the examiners and teachers for their comments and views.

Sir ARTHUR OLVER: Might I ask what is the position as regards Pharmacology?

The PRESIDENT: The syllabus in Pharmacology remains as at present.

Dr. WOOLDRIDGE: Might I also enquire whether, if after consultation with the various Universities concerned, it was thought desirable to amend the syllabus in any way in the first three years, that would be a simple or a difficult matter?

The PRESIDENT: It is not very difficult. It is a matter of giving notice of alteration. Before any decision could be taken it would involve discussion as to whether the recommendation should be adopted or not, but the formalities are not complicated.

Dr. WOOLDRIDGE: In view of that statement, I do not wish to take the matter any further. I feel that it would have been advisable for the Council to have consulted with the Universities as to the arrangement of the teaching in the first three years, but if it can easily be altered if that is thought desirable after discussion, I will not move the amendment I was going to move.

Professor SHARE JONES: Is it not a fact that in the preparation of this material which is before us for consideration to-day there has already been the fullest and freest consultation with those interested?

The PRESIDENT: That is true.

Professor SHARE JONES: You have had opinions from all centres?

The PRESIDENT: Yes. Dr. Wooldridge went further than that; he mentioned Universities.

Professor SHARE JONES: Which Universities? All the parties concerned in this matter have been consulted?

Professor BUXTON: The teachers who are recognised University teachers have been consulted.

Dr. WOOLDRIDGE: I think my meaning is perfectly clear to every member of this Council, and I do not want to elaborate it. I feel that in view of the recommendation of a certain external Committee it might have been desirable for this Council not to reframe the syllabus for the first three years until besides consulting the Centres it had at least held some sort of conference with the five Universities named in the Report. I rose on this point simply to be assured that if such a conference is ultimately arranged and recommendations are made by that conference it is not going to be an insuperable matter to have the syllabus altered.

The PRESIDENT: In those circumstances it would not be insuperable.

Professor SHARE JONES: I rise here on a question of procedure. We are asked to commit

ourselves through the Chair to a certain line of action in the event of something happening in the future. At the present moment there is business before this Council and a definite report for consideration, for adoption or rejection on the evidence which is before us. We cannot allow the teachers to dictate to us as to what we should do this afternoon. We may not do some of these things which it is presumed will be easily done. At the moment we are dealing with the business in hand.

Mr. WALKER: May I point out that it takes about six months to make an alteration in the second schedule of the By-laws, or perhaps a little more.

Dr. WOOLDRIDGE: That makes it very easy for me, because in the main I am whole-heartedly in favour of these alterations suggested by the Committee, but I personally do not think they have altered them as far as they should and I wanted to know what the position was as regards further alterations.

The report was adopted.

(To be continued.)

N.V.M.A. DIVISIONAL REPORTS

Southern Counties Veterinary Society*

ANNUAL MEETING AT SALISBURY

The fifty-fifth annual general meeting of the Southern Counties Veterinary Society was held at the Red Lion Hotel, Salisbury, on Friday, March 10th, 1939.

The President, Mr. F. Beckett, F.R.C.V.S., occupied the Chair, and others present were: Messrs. N. S. Barron, H. S. Caldwell, Major C. Davenport, Messrs. G. N. Gould, E. R. Harding, K. G. Morgan, H. C. Rockett, A. Spicer, J. F. D. Tutt, Major E. Wallace and Mr. J. B. White, with Messrs. E. Brown, J. A. McCutcheon, Dr. A. C. Fraser, Major H. Kirk, Mr. W. P. Loft, Miss Scutt and Mr. K. C. Sellars as visitors.

The PRESIDENT said that before asking the Secretary to present the minutes of the last meeting he wished to refer to the death of Mr. Henry Gray and he suggested that a letter should be sent to his family expressing sympathy from the Division.

The SECRETARY said Mr. Gray had been an honorary member of the Society for a good number of years.

The meeting agreed that a letter should be sent.

The reading of the minutes of the last meeting held at Southampton on December 17th, which had not yet been published, was postponed; the published minutes of the meeting of October 21st were taken as read and confirmed.

Correspondence.—(1) From Sir F. Hobday, Professor W. C. Miller and Mr. G. W. Begg, apologising for their inability to attend the meeting.

(2) From Dr. Bullock, acknowledging receipt of £2 from the Victoria Veterinary Benevolent Fund box which was opened at the last meeting.

(3) From Bayer Products, Ltd., offering to show a film which they had made on the subject of "Sterility" at one of the Society's meetings.

It was agreed that the film should be shown to the Society at a future meeting.

Membership.—On the proposition of Major Davenport, seconded by the President, Major R. C. G. Thwaytes, F.R.C.V.S., of Emsworth, Hants, was elected to membership of the Society.

HON. TREASURER'S REPORT

The HON. TREASURER, in presenting his report, said that although there was a slight deficit he considered the state of the accounts was satisfactory. Their income was very small, and they were, he thought, rather more generous than they could strictly afford to be in these circumstances.

On the other hand, the organisations they subscribed to were all deserving ones and he suggested they continued with the present subscriptions excepting that of the Library Endowment Fund which, he suggested, might be halved.

The Hon. Treasurer then presented details of the accounts, after which the report was adopted by the meeting, it being agreed to accept the Hon. Treasurer's suggestions in regard to subscriptions.

The PRESIDENT thanked the Treasurer for his work during the past year. He said it would be a matter of great regret to him to see the subscription to the National Horse Association dropped because he understood that this deserving body was getting a good deal less money paid into its funds than heretofore.

HON. SECRETARY'S REPORT

The SECRETARY presented his report as follows:

It is one of the duties of Hon. Secretary to report to the annual general meeting on the activities of the year.

There have been four meetings, as follows:—

The annual general meeting, held in March of last year, at Salisbury, at which there was an attendance of seven fellows and three visitors. On this occasion Mr. Menzies presented a paper on "Non-Parasitic Diseases of Sheep in South Wales," the discussion being opened by Mr. N. S. Barron.

Summer meeting at Blandford on June 10th arranged by the President, who gave demonstrations of the use of stomach tubes, on spinal

* Received for publication, May 14th, 1939.

anaesthesia, a surgical case, etc. A number of animals were provided for demonstrations by those attending. There was an attendance of five fellows and two visitors.

The October meeting took place at the Hants' Farm Institute, Sparsholt, Winchester, when the innovation of an informal luncheon was introduced. There was a demonstration by Dr. Blount of *post-mortem* technique on poultry, with specimens of diseased conditions. The meeting was preceded by inspection of the poultry plant at the Farm Institute, details being explained by the County Poultry Instructor. Six fellows and two visitors attended; also the poultry staff of the Farm Institute.

At the fourth meeting, held in Southampton on Dec. 16th, Mr. E. L. Taylor gave a demonstration on "Aids to Diagnosis of Helminthic Disease," the attendance being eleven fellows and six visitors.

One meeting of Council of the Society was held prior to the December general meeting. All the members of the Council attending.

The poor attendances at the first three meetings were discouraging, but it is realised that the year has been one of increased activity and I trust that all the members will be kept busy—there is, we all agree, plenty of work to be done. This increase of work, in itself, will bring problems which can only be solved by close liaison between the two main branches of the profession, and it appears to me to be becoming more and more essential to get together. The meetings provided by the Divisions of the N.V.M.A. must form the chief unifying bonds between all the professional interests in the country.

Only about half the members of the R.C.V.S. resident in the area of this Division are members of the Society. Any suggestions as to venues for meetings, subjects for discussion, etc., would be appreciated.

During the year three new members have been elected and four resignations accepted.

The PRESIDENT thanked the Secretary for his efforts on behalf of the Division during the year, and said he had done a lot of work to try and keep the Society alive. Practically unaided he had kept the Society together, and he thought they owed the Secretary a great deal.

The Secretary's report was adopted.

Election of Officers.—The officers and Council were re-elected *en bloc.*

Future Meetings.—The SECRETARY said that at the last meeting it was agreed that the question of future meetings of the Society should be left to the annual general meeting. He thought that summer meetings had not been very popular, and the opinion was that they should have more of their meetings in the winter. He deemed it advisable to leave out the summer meeting and get the four meetings more in the winter months.

Mr. N. S. BARRON expressed the view that the summer should be free of meetings as far as possible owing to the small attendances in the past. He thought possibly it would be better to cut out one of the meetings altogether rather than try to have four during the winter. He would make that a proposition, that one of the summer meetings should be dropped.

Mr. TUTT seconded.

The TREASURER said he thought one meeting in three months was all they could really manage.

The SECRETARY pointed out that under the rules of the Society they were supposed to have four meetings a year, but they could alter the rule at that annual meeting because the matter was on the agenda.

It was agreed that in future there should be three meetings a year.

Co-operation with the P.D.S.A.P.—The PRESIDENT said that he had heard from one or two members about the circular letter from the President, R.C.V.S., and the press publicity relative to the P.D.S.A.P. There were present, fortunately, members of Council, R.C.V.S., who could explain what had been done, but before discussing the subject, he suggested that they should go into committee.

The meeting agreed, and a lengthy discussion ensued. After resuming open meeting, it was proposed by Mr. MAYNARD, seconded by Mr. BECKETT, and carried by a majority, that the matter be put on the agenda for the next meeting.

Paper.—Dr. A. C. FRASER, B.V.Sc., M.R.C.V.S., of Lambourn, then gave a most instructive paper entitled "Notes on Diseases of the Foal." [Dr. Fraser's paper, the subject of which is dealt with editorially in this issue, is inserted at the commencement of this week's *Veterinary Record*, together with Mr. J. F. D. Tutt's opening of the discussion—no report was made of the general discussion.—*Editor.*]

Following Mr. Tutt's opening there was an interesting general discussion, to which Mr. Sellars, Major Davenport, Mr. Rockett and others made useful contributions, and to which Dr. Fraser replied.

The PRESIDENT expressed the thanks of the meeting to Dr. Fraser for his paper and to Mr. Tutt for his opening of the discussion.

The meeting concluded with tea, provided by the kind hospitality of the Salisbury members.

H. S. CALDWELL, *Hon. Secretary.*

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North of Scotland V.M.A.*

MEETING AT ABERDEEN

A meeting of the above Division was held in Marischal College, Aberdeen, on Saturday, May 27th, 1939.

* Received for publication, July 1st, 1939.

The President, Mr. W. J. B. Robson, M.R.C.V.S., occupied the chair and other members present were: Messrs. R. D. Mackintosh, D. M. McIntyre J. Gordon Souter, J. Grant, W. Jackson Young, W. J. Rice, D. Walker, D. Cumming, W. A. R. Ogilvie, A. Kerr, A. T. Mower, H. McVean, A. M. Shepherd and George Howie, Honorary Secretary. Mr. John Lyon was also present.

Apologies for absence were intimated from Messrs. T. Johnston, James Anderson, Wm. Anderson, D. R. McRae, J. Smith, H. W. Robson, D. Clerk and A. Sievwright.

The Secretary read a letter from Mr. D. Clerk, Stonehaven, containing his resignation from the Division and in view of the fact that Mr. Clerk was retiring and would very probably leave the district, his resignation was accepted with regret.

Obituary.—Reference was then made by the President to the loss sustained by the Division in the death of Mr. Robert E. Drennan and in the course of his remarks he said that Mr. Drennan had been a regular attender at our meetings and always took a keen interest in all business and discussions. He was ever ready to give his advice and help both professionally and outwith the realms of his profession. His cheery disposition, ready wit, and untiring ardour for his work earned him the highest esteem of his colleagues and also of a large clientele. It was also intimated that a wreath had been sent from the Division and a letter of thanks had been received from Mrs. Drennan and her two sons, who had since suffered a second tragic blow in the death of their mother. The President then requested the members to stand in silence in token of respect for their old colleague.

Correspondence. — The following correspondence was then submitted by the Secretary:—

(*a*) A letter regarding the "Adrian Jones Statue Appeal Fund." It was decided that no action should be taken by the Division but the matter left to individual members to subscribe to the Fund if they felt so inclined.

(*b*) A letter on the Veterinary Profession and the Poultry Industry. The desirability of arranging for a course of lectures on the management and diseases of poultry was very fully discussed. Mr. J. Grant, Lecturer in Veterinary Hygiene, North of Scotland College of Agriculture, gave it as his opinion that it would be necessary to have a prolonged series of lectures if any useful purpose was to be served and he felt that each individual member would be better able to obtain more knowledge of poultry husbandry in his own practice, but he agreed to make arrangements with the Secretary to organise a series of demonstrations for the members after July.

(*c*) A letter from the Scottish Branch regarding the Branch Representation Fund. After discussion it was decided that the desirability for subscribing to the Fund should be left to individual members and that the subscriptions should be collected by the Secretary and forwarded to Major McGregor, Treasurer of the Fund.

(*d*) A letter from the General Secretary, N.V.M.A., regarding A.R.P. (Animals) Services. Mr. Jackson Young proposed, seconded by Mr. Rice, that this letter be allowed to lie on the table. The proposal was carried unanimously.

(*e*) A letter was read from Mr. R. D. Mackintosh, M.R.C.V.S., Insch. This letter stressed the desirability of the Division drawing up a new scale of fees which would be useful to act as a guide for new members and after a full discussion the President and Mr. Rice, Montrose, agreed to draw up a new scale of fees and present it at the next meeting for discussion.

Election of Office Bearers.—The President, Vice-President and Members of Council were re-elected for another term of office and Mr. Ogilvie was elected as a member of the Council in place of the late Mr. R. E. Drennan.

Mr. Howie was re-elected Honorary Secretary and Treasurer.

Election of New Members.—Mr. Howie proposed, seconded by Mr. Souter, that Mr. John Macdonald be elected as a member of the Division and the President proposed the re-election of Mr. John Lyon, Aberdeen.

Address.—The President then introduced Dr. J. F. Tocher, who delivered an address on "Mortality in Livestock due to Poisons." [Dr. Tocher's address is reproduced earlier in this issue.—*Editor.*]

The President then proposed that the members should accord a very hearty vote of thanks to Dr. Tocher for coming to the meeting and giving such an interesting address. He hoped that Dr. Tocher would understand that although there had not been a very full discussion it had not been for lack of interest in what the lecturer had to say.

Geo. Howie, *Hon. Secretary.*

In Parliament

The following are among the questions and answers recorded in the House of Commons recently:—

Cattle (Acclimatisation)

Lieut.-Colonel Sir Thomas Moore asked the Under-Secretary of State for India whether, in view of the urgency of raising milk-yield standards in India, he will take steps to encourage the experiments which are being made with regard to the possibility of acclimatising European pedigree cattle in the first place to a semi-tropical country such as Palestine and then sending the Palestine-born pedigree European animals to India?

Lieut.-Colonel Muirhead: I will invite the attention of the authorities in India to this suggestion. If my hon. and gallant Friend has

(*Continued at foot of column* 1, *page* 947)

ROYAL COLLEGE OF VETERINARY SURGEONS

Membership Examinatons—July, 1939

LIST OF SUCCESSFUL CANDIDATES

(*Continued from page* 917)

Edinburgh

FIRST YEAR:

Bayliss, John (B)
Beattie, I. S. (B)
Bell, R. L. (B)
Brown, I. L.
Brown, R. D.
*Bruce, Wm.
Cameron, J. A.
Carr, Peter
*Coombs, R. R. A.
*Cox, R. L.
Cran, Wm.
Dawson, C. D.
*Donald, D. E.
Dovey, J. S. (B)
Dymock, W. H.
Ferguson, James (B)
Garside, Peter (B)
Gibbs, J. R. (B)
*Gray, D. M.
Hall, J. G. (B)
Hamilton, H. A.
Hooton, J. K.
Johari, M. D.
*Lindley, P. E.
McIlroy, Gingles (C)
*Mackay, Allan
*Mackinnon, M. M.
*Maclachlan, G. K.
McMillen, F. H.
Macnaughton, R. R.
Machin, J. H.
Mason, A. D.
*Melrose, D. R.
*Muir, John
Murray, M. D.
Park, R. C.
Parker, H. J.
Philip, J. G.
Pottinger, F. H. (C)
Procter, F. D.
Ross, J. P. (B)
Smith, G. F. (C)
Smith, S. R. H.
Snalam, H. E.
*Spence, Tom
Stead, P. Y. (C)
Stokes, G. M.
*Stuart, Peter
Sutherland, F. R.
Walker, K. A.
*Watson, A. H.
Wauchob, R. D.
Whitney, E. W.
Wilson, Alex.
Wishart, Graham

* Denotes second class honours.
(C) Denotes credit in Chemistry.
(B) Denotes credit in Biology.

THIRD YEAR:

Agnew, J. H. (P) (A)
Aitken, H. F. M.
Aylward, B. G.
Bamber, W. B.
Barry, N. M.
Black, N. M.
Brown, I. M. (A) (H)
Brown, J. M.
Campbell, J. D.
Cloke, J. N. (P) (A)
Coles, N. D.
Coulton, R. H. M.
Cruickshanks, John (A)
Davies, D. R. T.
Davis, R. H. K.
Deas, D. W. (A)
Dixon, Edwin (A)
Ford, M. P.
Garfitt, C. R.
Grant, J. A.
Halcrow, R.
Hall, David
*Heath, G. B. S.
Irwin, S. A. (A)
Laing, J. A. (A) (H)
Lamont, H. A.
Lancaster, J. E. (H)
Littler, L. P.
McCormac, S. F.
McDougall, J. B.
Mackinnon, D. J.
Milne, F. J. (A)
Ord, George (A) (H)
Owen, D. W.
Pattison, I. H. (H)
Pook, H. L. (A)
Powley, G. S.
Quarmby, W. B.
*Stamp, J. T.
Wilson, Peter
Wood, R. I. (P)

* Denotes second class honours.
(P) Denotes credit in Pharmacology, etc.
(A) Denotes credit in Anatomy.
(H) Denotes credit in Hygiene.

Liverpool

SECOND YEAR:

Boulton, J. F.
*Boundy, T.
*Carlyle, A.
*Dugdill, R. S.
Ferguson, H. H.
Hague, D. C. (P)
Hargreaves, P. R.
Jones, E. B.
Jones, James (H)
*Jones, W. M.
Jubb, Miss S. C.
Kerr, P. A.
McGrath, J. F.
MacLennan, I. S. (P)
Richards, R. A. (P)
Saunders, W. O. E.
†Smith, B.
*Unsworth, K.
Williams, A. L. (P)
Wilson, Miss M. E. M. (P)
Wynne, M. (P)

† Denotes first class honours.
* Denotes second class honours.
(P) Denotes credit in Physiology, etc.
(H) Denotes credit in Histology, etc.

THIRD YEAR:

Clay, H. A. (A)
Coates, P. D. L.
Davies, H. S.
Foster, J. L.
Gibson, T. E.
Hopkins, C. D.
Jones, D. K.
Mitchell, P. J.
Pinkin, W. (A)
Shaw, I. G.
Stabler, A. B. O.
Williams, H. H. O.
Wilson, A. A. (A)
Wilson, Miss B. H.

(A) Denotes credit in Anatomy.

FOURTH YEAR:

Clarke, R.
Dye, R. W.
John, H. M.
Jones, H. E. W.
Lewis, G. D.
Morse, Miss M. D. R.
Scott, Miss M. F. (Paras)
Shaw, G. D.

(Paras) Denotes credit in Parasitology.

FIFTH YEAR:

Arthur, G. H.
Dalby, Miss M.
Hanbury, D. G.
Hodgkinson, E. J.
Moss, J. A.
Sutton, D. O.

London

FIRST YEAR:

*Ahmad, S. M.
Batt, P. R.
Baylis, Miss E. (B)
Blunt, M. H.
Boughton, A. R.
Brown, K. E. (C)
Builder, P. (C)
Coyle, T. J.
Crabtree, G. E.
†Davies, D. G. E.
Day, K. S. J. (B)
*Fawcus, E. W.
Franklin, R. D. (C)
*Griffiths, W. R.
*Halsted, A. F.
Harrison, P. D. (C)
*Hawkins, J. D.
Hayward, A. H. S.
*Herbert, T. G. G.
Holland, J. M.
Hughes, A. H. (C)
Jackson, Miss M. O. (B)
Jones, R. W. (B)
Kelsey, F. H. (B)
*Macadam, J.
Millar, A. M.
Milton, R.
*Mortimer, D. T.
Mutton, C. H.
Narayan, P. H.
Newsholme, C. M.
Owens, E. L.
*Prangley, P. J. M.
Reed, S. R. (C)
Reffell, A. D.
Rogerson, Miss J. M.
Schofield, Miss B. (B)
Shorter, D. R. (B)
Tayler, R. C. (C)
*Tyler, Miss A. I.
Walker, D. A. W. (B)
*Ward, V. C.
*Watson, C. B.
*Westcott, E. V.

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any information that would assist its consideration I should be glad to receive it.

Mr. ROBERT GIBSON: Is the hon. and gallant Member aware that the Ayrshire breed is very adaptable, and that there are already representatives of this breed in India?

Lieut.-Colonel MUIRHEAD: I have heard that opinion expressed more than once before.

Sir T. MOORE: Is not my hon. and gallant Friend aware that it is not necessary for any other hon. Member to make such representations? I am perfectly capable of doing that.

*Willis, E. O.
Wills, Miss B. S. (B)
Wood, D. R. (B)
Yockney, G. L. (B)

† Denotes first class honours.
*Denotes second class honours.
(C) Denotes credit in Chemistry.
(B) Denotes credit in Biology.

SECOND YEAR:

*Arnold, R. M.
Balankura, K.
Balls, G.
Birkett, Mrs. H.
Bowen, P. D. G.
Brain, P. G. P. (P)
Bryce, Miss M. R. (P)
Bullen, J. J.
*Campbell, J. A.
Chaudhary, S. A. (P)
*Clark, Miss C. L.
Cooke, C. D.
*Dyke, Miss B.
Eastwood, R.
Edwards, F. B. (H)
Field, H. I.
Fincham, I. H.
Fletcher, F. K. (H)
Fowler, G. Q.
French, T. H.
Frost, H. H. (H)
Gabb, K. R.
†Grieve, Miss C. G.
Holland, E. H.
*Howson, Miss G. R.
*Kaushash, N. C.
*Kendall, S. B.
*Knight, R. W. J.
*Landau, M.
Leach, T. M.
Lloyd, H. G.
McCrea, M. R.
McGirr, J. L.
Marten, D. W. (H)
Maxted, Miss J. E.
Morgan, J. B. D.
Morgan, T. J.
O'Connor, T. M.
O'Neill, A. G.
Ritchie, Miss M. D.
Robins, J. H.
Sasibutra, L.
Scott-Elliott, Miss A.
Skyrme, E. F.
Skyrme, H. P.
Slack, A. J.
Smith, G. J. E.
Stones, L. C.
Sykes, P. E.
Taylor, A. M.
*Thorne, A. L. C.
Trump, H. L. (H)
*Walker, R. G.
Weitz, B. (H)
Welch, A. G. (H)
Welch, Miss R.
Westcott, E. J.
Williamson, T. F.
Witherington, D. H.
Yeoman, G. H. (P)

† Denotes first class honours.
* Denotes second class honours.
(P) Denotes credit in Physiology, etc.
(H) Denotes credit in Histology, etc.

THIRD YEAR:

Barwick, Miss E. M.
Blaikley, G.
Blair-Fish, P. R. (A)
Butcher, B.
Byles, Miss M. D.
*Chandra, B.
Chandra, V. P.
Fletcher, J. C.
Foster, A. V. B. (A) (H)
Hindle, J. J. R. (A)
Jordan, F. T. W.
Juneja, G. C.
Kirkwood, A. K. (A)
Lake, D. P. (A)
Lall, H. (P) (A)
Lewis, E. F.
McCullagh, A. F.
Macgregor, D. E. (P)(A)
Mares, R. G. (P)
Markham, A. E. G. (A) (H)
Morrison, A. M. (A) (H)
Osborn, Miss J.
Phillips, R. N.
Pierce, A. E.
Rawlinson, W. E.
Smith, H. W.
Threlkeld, T.
Vale, R. H.
Wickens, J. T.
Williamson, G. T.

* Denotes second class honours.
(P) Denotes credit in Pharmacology, etc.
(A) Denotes credit in Anatomy.
(H) Denotes credit in Hygiene, etc.

FOURTH YEAR:

Beale, Miss J. H.
Blampied, P. H.
Comyn, R. B.
*Cotchin, E.
Dorman, A. E.
Esdaile, Miss A. G.
Fisher, Miss E. J.
Foden, C. A.
Fox, Miss W. E.
Francis, F.
Gooch, R. H.
Greeves, D. H.
Harries, L. G.
Kyaw, M. H.
Leech, F. B. (Paras)
Lipscomb, Miss S.
Makinson, J. B.
Mayor, O. Y. (Paras)
Moon, G. J.
Nixon, G.
Parsons, J. H. (Paras)
Peters, E. G. E.
Plumbly, G. P.
Reynolds, Miss J.
Russell, Miss A. F.
Salmon, Miss S. (Paras)
Steel, P. G.
Stephens, A. D.
*Ticehurst, R. E.
Wilde, J. K. H.
Willett, D. N. (Paras)

* Denotes second class honours.
(Paras) Denotes credit in Parasitology.

FIFTH YEAR:

Abrams, Miss A. M.
Ahmad, A.
Anthony, J. E.
Bentley, Miss M. A. W.
Bugg, R. R.
Bunker, J. A.
Douglas, S. W.
Downe, C. H.
Edwards, F. V.
Farmer, Miss G. J.
Freak, Miss M.
Fussell, Miss M. E.
Gray, W. van O.
Griffiths, T. L. (S)
Hanman, Miss M. E.
Harrop, A. E.
Hart, J. F.
Hobbs, P. H.
Jeaffreson, Miss A. M.
Kraft, Miss I. R.
Littlewood, H. K.
Mason, G. S.
Packer, R. H.
Pocock, Miss M. F. (S)
Spriggs, D. N.
Sternhell, Arthur
Studdy, E. V. H.
Taylor, D. W. B.
Tutt, J. B.
Wait, P.
Wakley, L. J.
Wilmot-Smith, J. P.

(S) Denotes credit in Surgery.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

July 31st.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.

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THE YARMOUTH CONGRESS

The 1939 Congress of the Association opened on Sunday with every indication that the high standard achieved in previous years would be fully maintained. The spirits of the members of the Provisional Committee present must have risen high when, at the Winter Gardens Ball Room in the evening, they realised that the attendance came near to creating a record for the initial stage of the Conference proceedings. Certainly in the matters of accommodation, hospitality and entertainment, the "At Home" held by the Eastern Counties and the Lincolnshire Divisions left nothing to be desired.

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The sun generously assisted to make enthusiasm still warmer on the Monday when, following a cordial civic welcome from the Mayor, Councillor A. W. Hollis, the delegates settled down to the serious business of the Congress with the opening by the President, Mr. Brennan DeVine, of the impressive exhibition of drugs and instruments. The Conference then resumed its session at the Town Hall, where a large assembly gave Dr. Lovell's opening paper "Causes of Deaths among Calves in Dairy Herds" an informative discussion. Later in the

day the delegates were shown an instructive series of films of scientific interest, provided by Bayer Products, Ltd., while in the evening the civic spirit of welcoming friendliness was again manifested at a reception in the Winter Gardens Ball Room.

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Sessional attendance increased on Tuesday for the paper by Mr. F. Day on "Sterility in the Mare associated with irregularities of the Oestrous Cycle," while the event proved that Dr. John Hammond's contribution on "Physiological Aspects of Bovine Sterility," and the discussion which ensued, had justifiably been anticipated as one of the attractive features of the meeting.

Commodious as is Mr. Shipley's yard, its capacity was taxed to the utmost in the afternoon for a most instructive series of exhibits and demonstrations, and after a somewhat arduous day all were glad of the informal social relaxation represented by the President's reception, which was attended by numbers approaching a record.

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These notes are written immediately following another major item of the programme, the presentation of the paper by the Chief Veterinary Officer of the Ministry of Agriculture, Mr. D. A. E. Cabot, on "The Centralised Veterinary Service," which had been eagerly awaited, as also was the annual general meeting on the Wednesday afternoon, at which Mr. H. W. Steele-Bodger, of Tamworth, was elected as President of the Association for 1939-40, with Dr. W. R. Wooldridge, though still "in harness" as Hon. Secretary, as President-Elect —both thoroughly popular and well-merited honours.

Southport has been selected as the place of meeting for 1940.

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PERSONAL

The many enquirers after the health of Mr. R. Simpson will be glad to hear that, after a brief period in a London nursing home for a minor operation, he is progressing favourably, but it is probable that he will not return to duty before the autumn.

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Professor Share Jones, of Wrexham, formerly director of veterinary studies at Liverpool University, has been adopted as prospective Liberal candidate for the Shrewsbury division at the next General Election.

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Wills.—Mr. Arthur Jeff Horner, of Woodhouse, Farlington, formerly of Grove House, Witham, veterinary surgeon, aged 56 years, left to his brothers Isaac and John "one of the lion skins shot by me in Africa," and the residue of his property to his neice, Kathleen Mary Johnson. Gross value £5,306.

Mr. Lawrence Clarke Tipper, M.R.C.V.S., of Moseley, Birmingham, died on April 22nd, aged 84, leaving estate of the gross value of £51,460, with net personalty £39,252. He left: £100 each to St. Paul's Church, Balsall Heath, Moseley Parish Church, Kingston Church, Worcestershire, and Dormeston Church, Worcestershire.

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Birth.—Swann.—On July 25th at White House, King's Lynn, to Edna (*née* Humphrey), wife of Harold C. Swann, M.R.C.V.S., a son.

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Three Generations in One Calling

The rare distinction of having three living generations of one family enter the profession has been achieved by the recent graduation of Mr. J. B. Tutt, son of Mr. J. F. D. Tutt, of Winchester, and grandson of Mr. J. B. Tutt.

Mr. J. B. Tutt, Jun., has been appointed House Surgeon at the Royal Veterinary College, Camden Town.

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R.C.V.S. OBITUARY

Jones, John Hudson, M.B., Inver, Larne, Co. Antrim. Graduated Edinburgh, April 16th, 1875. Died July 16th, 1939.

Dr. J. H. Jones retired about 20 years ago from the position of portal veterinary inspector at Larne Harbour. In addition to his membership of the Royal College of Veterinary Surgeons, Dr. Jones was the holder of a medical degree in the Royal University of Ireland. He had long service in Government work at Dublin and other ports. As Mrs. Jones died only two months ago, there will be widespread sympathy for the only child, Miss Amalie Jones.

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Condon, Thomas, Ballyallinan Castle, Rathkeale, Co. Limerick. Graduated Edinburgh, June 1st, 1891. Died July 13th, 1939.

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GENERAL OBITUARY

Captain Miller Yardley

The death occurred on July 16th of Captain George Miller Yardley, formerly of Walsall. "Throughout the War," says the *Birmingham Post*, "Captain Yardley served both in France and Italy with the Royal Army Veterinary Corps and during the latter part of his service held the appointment of chief surgeon to the late Sir Frederick Hobday, honorary veterinary surgeon to the King. While stationed at Cremona, in Italy, Captain Yardley gave valuable assistance in training students for the Italian Army Veterinary Service. For many years Captain Yardley had been living in retirement at Teignmouth."

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LEGAL NOTES

Horse Dealer Fined for Selling a Mare Suspected of Mange.—At West Ham Police Court on July 18th, Mr. F. Glanville, of 117, Livingstone Road, Stratford, E.15, was fined 40s. after pleading guilty to unlawfully moving a chestnut mare in contravention of the terms of Form "A" —a detention notice served under the Parasitic Mange Order of 1938.

Mr. H. E. Bywater, prosecuting on behalf of the West Ham County Borough, said that the defendant bought a chestnut mare in a horse repository on May 15th, and finding that it had a little skin trouble took it to his veterinary surgeon who reported the case to the local authority. The case was reported to the Ministry

of Agriculture and Fisheries as suspected mange and a notice was served on Mr. Glanville requiring the mare to be isolated. A veterinary inspector of the Ministry subsequently confirmed the case as suspected mange and forwarded specimens for examination to the Ministry's laboratory leaving word at Mr. Glanville's house that the result of the examination would be known in a day or so.

The laboratory examination being inconclusive a further visit was made to the premises by a divisional inspector and a veterinary inspector of the Ministry, and by inspectors of the local authority, on May 24th, but the mare could not be found on the isolation premises. The defendant, who was present, stated that he sold the mare on May 22nd in the auction market where he formerly purchased her.

After some trouble the mare was eventually traced by the Ministry of Agriculture to Shropshire, where a further examination failed to reveal parasitic mange.

Mr. Glanville had worked very hard on the mare whilst she was in his possession and had dressed it with a parasitic mange remedy.

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ARMY OFFICERS' PROMOTION EXAMINATIONS

Captain J. Clabby, Royal Army Veterinary Corps, is among the list of successful candidates for the examination of officers with a view to promotion in the Regular Army, etc., which was held at home stations in March last.

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CONTROL OF DISEASE IN IMPORTED LIVE POULTRY

A resolution calling for regulations to be imposed making it compulsory for all live poultry entering Great Britain to be accompanied by veterinary certificates to the effect that the birds are free from bacillary white diarrhoea and other infectious and contagious diseases was passed by the "National Poultry Parliament" recently.

Mr. W. Hamnett, who proposed the resolution, said that much of the stock which came into this country and was supposed to be killed for consumption was sold alive in markets and then bred from. Actually the birds were not consumed in some cases until two years later.

Mr. Hamnett drew attention to the stringent regulations governing the export of stock to Ireland, and contended that in fairness birds sent from that country to Great Britain should be subject to similar regulations.

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HEREDITARY MELANOSIS IN FISHES

Melanosis is, of course, a subject of considerable importance in the domesticated animals, the familiar examples being the melanosis of grey horses and sometimes of red cattle.* The following annotation from the *British Medical Journal*, referring to the hereditary origin of the condition is therefore of some importance.

"Spontaneous melanotic overgrowths, determined by genetic factors, occur in hybrids of two Mexican killifishes which, being handsome and well behaved, are popular inhabitants of 'tropical' aquaria and are commonly known as 'platys' (*Platypoecilus maculatus*) and 'swordtails' (*Xiphophorus hellerei*). Häussler,[1] who apparently first recorded the overgrowths, enumerates the advantages of these fishes for genetic experiments; they are small, easily kept, breed prolifically, and have a short life span, whilst the overgrowths are easily seen. Descriptions of the fishes and the tumours, with beautiful illustrations, are given in a series of papers[2] by Reed, Gordon, and their colleagues. In platys and swordtails macromelanophores are restricted to scattered areas of the corium. In certain hybrids the macromelanophores multiply and almost completely replace the corium; they penetrate the fascia between corium and muscles, extend along the fascial planes, and surround the small muscle fibres, which atrophy. In some hybrids this condition has been reached at the day of birth. In older hybrids the deep invasion of macromelanophores continues, the corium becomes thickened, and, finally, true localised overgrowths occur and develop rapidly. The overgrowths are composed of pigmented cells usually spindle-shaped and much smaller than the macromelanophores; their origin is undecided. Gordon and Smith[3] state that the cells resemble those of human melanosarcoma. Other observers agree that the overgrowths are true tumours, though Häussler is not certain that they are malignant since some benign tumours in fishes infiltrate the surrounding tissue. Metastasis has not been observed, but, according to Haddow and Blake,[4] it is rare in fishes bearing undoubted malignant tumours. Haddow and Blake further record that transplantation of tumours in fishes is usually fatal. Successful transplantation of the melanotic overgrowths would give important information and might perhaps be achieved if new methods were used. The descriptions and a few of the published illustrations support the claim that the overgrowths are tumours, but additional evidence would be welcome. The overgrowths develop spontaneously in hybrids with an appropriate combination of Mendelian genetic factors. The platy contributes a dominant sex-linked factor for macromelanophores, while the swordtail contributes modifying factors which are also dominant. The degree of melanosis probably depends on the number of modifying factors present. Reed and Smith[5] find that modifying factors are supplied also by other species of platyfish occurring in different Mexican rivers, and that the degree of melanosis is most intense when the sources of the fishes used for hybridisation are most widely separated. Häussler draws attention to an important distinction between the genetic determination of these overgrowths and the determination of tumours in mice. In mice the determination is ascribed to one or more genetic factors for tumour development, but in the fishes the genetic factors concerned are those which determine normal characteristics in the pure races, and it is only the unusual combination of factors brought about by hybridisation which leads to overgrowth. It is possible, therefore, that genetic experiments on fishes may provide valuable data not obtainable from mice."

*It will be recalled that an interesting article on "The Melanomata," by S. Hadwen, appeared in the Jubilee Number of the *Journal of Comparative Pathology and Therapeutics* (December 31st, 1937, Vol. **50**.—No. 4: A *Festschrift* to Sir John M'Fadyean).

[1] *Z. Krebsforsch*, 1934, **40**, 280.
[2] *Amer. J. Cancer*, 1931, **15**, 732, 1495, and 1524; 1937, **30**, 362.
[3] *Ibid.*, 1938, **34**, 255.
[4] *J. Path. Bact.*, 1933, **36**, 41.
[5] *Amer. J. Cancer*, 1938, **34**, 543.